INDUSTRIAL RELATIONS
RESEARCH ASSOCIATION SERIES

Proceedings of the
Forty-Second Annual Meeting

DECEMBER 28-30, 1989
ATLANTA

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JOHN F. BURTON, JR., EDITOR

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PREFACE

The topics covered in the sessions at the 1989 Annual Meeting included a variety of disciplines and issues, reflecting the diverse membership of the Industrial Relations Research Association. Several sessions examined "traditional" labor relations areas, such as union organizing activities and the role of the National Labor Relations Board. Complementing these sessions was the Distinguished Speaker Address, presented by Thomas R. Donahue, Secretary-Treasurer of the AFL-CIO.

Other sessions at the IRRA Meeting dealt with emerging issues in human resource management, such as quality of work life programs and the effect of new technology on work. The number of sessions dealing with international or comparative aspects of industrial relations was particularly impressive. The North American labor market was the subject for one session, while two other sessions examined the effects of trade policy on aspects of industrial relations.

Concerns with workplace conditions were also featured at the Annual Meeting, including a session on AIDS in the workplace. The Presidential Address by Joyce D. Miller dealt with women workers and their achievements, frustrations, and aspirations.

The diversity of the topics and disciplines represented at the 1989 Annual Meeting bodes well for the future of the IRRA: they suggest that the Association is adapting its programs to the changing reality of industrial relations.

Adaption to change is also a theme of the IRRA Annual Reports that are included in these proceedings. The IRRA Executive Board had reacted to the report of the Comprehensive Review Committee by establishing three Working Groups—Local Chapter Relations, Winter and Spring Meetings, and Research Publications. Reports from these Working Groups were submitted to the IRRA Executive Board in 1989, and several significant changes in the activities of the Association in the areas examined by the Working Groups are reported in the minutes of the IRRA Executive Board meetings.

One of the changes affected the publication functions of the IRRA. A permanent Editorial Committee has been established to develop policy on the full range of IRRA publications, including the Newsletter, the annual research volumes, and the Proceedings of the Winter and Spring Meetings. The position of IRRA Editor has been redefined to include serving as chair of the Editorial Committee. A new position of Managing Editor has been established and Elaine Moran has been selected for the position. Elaine's first major assignment was to prepare these proceedings for publication. During a transition period, Professor Craig Olson of the University of Wisconsin agreed to serve as acting IRRA Editor for the preparation of the current publication. I would like to express my appreciation to Craig and Elaine for their contributions to this volume.

The restructuring of the IRRA editorial functions was occasioned in part by the retirement of Barbara D. Dennis as Editor of the IRRA. It is a tribute to her abilities that her former responsibilities have now been divided among an Editor and a Managing Editor. Barbara has made a major contribution to the quality of the IRRA publications. On behalf of the IRRA, I wish to express our appreciation to Barbara and extend our best wishes to her during her retirement.

John F. Burton, Jr.
Editor

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I. PRESIDENTIAL ADDRESS

Labor, Management, and Women Workers

JOYCE D. MILLER
Vice President ACTWU, AFL-CIO

Labor, management, and women workers are an essential ingredient in today's work force. We will continue to play a key role in the working world during the twenty-first century as we take on an evergrowing proportion of the jobs.

Women work for much the same economic reasons as do men. We need money to provide food, shelter, and clothing for ourselves and our families.

The statistics are dramatic!

- Today nearly 70 percent of women between the ages of 20 and 54 are in the work force; many are single parents who carry the sole burden of support for themselves, their children, or elderly family members.
- In households with two earners, 70 percent of the women are part of the paid work force. Two-thirds hold down full-time jobs outside the home just to help their families make ends meet.
- Over 50 percent of married women with children under the age of one year work outside the home.

Women need jobs, and jobs need women—particularly as we confront an increasing labor shortage. By the year 2000, women will make up nearly 50 percent of the entire work force. In fact, women will account for 65 percent of the growth in the labor force over the next decade.

Eighty percent of all working women are of childbearing age and most will have children, if they do not already have them.

And have you heard of a new phenomenon known as the "Sandwich Generation"—a phrase for women who almost imme-

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diately swap the task of child rearing to one of tending to ill parents or spouses or doing both at once. Today, one million women have the responsibility of caring for both children and parents—while simultaneously holding down a job outside the home.

For too long, society has looked on these hardships as a responsibility that lies within the four walls of the home.

For too long, America has ignored the consequences of not providing support for such families—today we are paying for society's neglect with an increase in crime, high illiteracy rates, hard-drug abuse, and reduced worker productivity.

If women as well as men must work, then society—through activist government—must help develop programs that resolve the conflict between work and home. After all, family and work problems affect both partners.

For what is society, if not our children and our children's children? There is nothing more precious than our next generation—and as citizens we must prepare our future by paying attention to our children!

In short, we need a national family policy. Even IRRA and ASSA are making changes in response to family needs—changing our forty-fourth national meeting to the first week of January.

It says something about the sorry state of affairs in this country that the United States stands alone with South Africa as the only industrialized nations in the world without a national family policy.

What would such a policy do?

It would offer job-protected leave to either spouse upon the birth or adoption of a child, the illness of a family member, or the disability of a worker.

It would work closely with employers and trade unions to establish affordable, quality day care for children and senior adults.

It would address the issue of comprehensive health care at a time when 37 million Americans, a tragically large percentage of them low-wage workers, are without any affordable access to medical care.

But the bottom line to the physical health of the American family is economic security.

All individuals should have the right to a job at a living wage and the right to decent, affordable housing.

Enactment of legislation now before Congress—including the Family and Medical Leave Act and the Act for Better Child Care—would begin to provide solutions to some of those pressing issues.

A growing number of public and private employers are responding to labor's concerns over these issues, and they are taking steps to help shape solutions to problems that affect the core values of the American family.

The new contract negotiated by the communications workers and the IBEW with AT&T, for example, addresses some of these crucial issues:

- It creates a $5 million fund to develop child care and services for the elderly;
- It establishes accounts into which employees can set aside up to $5,000 a year, tax free, for the care of dependents;
- It reimburses a family for up to $2,000 of the costs involved in adoptions;
- It provides for an extension of unpaid parental leave for one year to care for ailing relatives, during which time employees will continue to receive certain benefits and will be guaranteed their old job upon their return.

Many of these benefits can be provided at little cost to the employer and may actually be cost saving over time.

A recent general accounting office study showed that companies that provide leave can temporarily replace workers for the same or lower cost, which means that extending such benefits helps produce a happier work force without adding to management's financial costs.

But, a family policy can't be implemented on a piecemeal basis at the bargaining table. It has to be a federally mandated policy. We've had successive terms of leaders in Washington who tell us that family is their first concern. Well, all of us here today know that the real concerns—the concerns of mothers, fathers, and children—aren't being met by Washington today. And we demand that rhetoric be replaced by reality.

There are 25 million children under the age of 14 in the United States who have both parents working. Yet, only 1.3 million are enrolled in licensed child care centers.

The average child care cost is $3,000 to $5,000 per child per year—a staggering cost beyond the reach of many families. However, even at that price, there is no guarantee of quality care for children. In New York, child care costs about three times as much—nearly $9,000 a year, or $172 a week. How many working class families can afford that?

Only 3,000 employers out of six million provide child care support, ranging from resources and referral to on-site care.

Many unions have already tried to address this problem. My own union, The Amalgamated Clothing and Textile Workers, established six such centers—five in the Baltimore region and one in Chicago—to try to serve the needs of our members, but, with the import-driven recession in the apparel industry came the end of those child care centers.

It's unreal to expect that either employers or unions can, by themselves, adequately address the needs of 25 million children.

Federal action is required, and the Act for Better Child Care would begin to deal with this urgent problem.

Another growing problem that needs to be addressed is care for disabled and elderly adults.

Between 70 and 80 percent of the chronically ill older adults are living in the community and are being cared for by relatives—mostly women.

Middle-class elders find themselves trapped in a catch 22. They do not qualify for Medicaid coverage for in-home treatment, yet they cannot afford the $300 to $400 a week for uninsured home health care.

Our senior citizens—those whose hands helped build America and who gave us so much during their working lives—now are threatened with economic devastation in what should be their golden years. And let me remind you, all of us will grow old someday—if we are lucky!

We need to restore Title XX funds for senior day care. We must expand Medicaid coverage to encourage in-home recovery and discourage the practice of nursing home warehousing.

A national family policy requires something else—the assurance that workers receive a living wage.

During the 1950s, the minimum wage was roughly 57 percent of the average hourly wage. Even when the pay floor rises to $3.80 in April 1990, it will still represent only 39 percent of average hourly wages.

In other words, a worker employed full-time at the minimum wage ends up below the national poverty line for a family of three. And keep in mind that 64 percent of all minimum wage earners in the United States are women, a majority of whom are the sole support of their families.

Another problem facing women in the work place is gender-based wage discrimination. Women earn only 70 cents for each one dollar earned by men. For black women, the gap is even wider—they earn only 59 percent of what black men are paid, and Hispanic women lag even further behind, at only 55 percent.

At the root of this job and wage bias is the fact that women remain segregated because two out of three women work in occupations that are female-dominated. It is because of this condition that the trade union movement has been so persistent in its fight for pay equity—to help redress a serious wrong that pervades the workplace.

And what about health care? Once again, the U.S. joins South Africa in the dubious distinction of being the only two industrialized countries in the world with no national health program for all their citizens.

More than anything else, the health care crisis affects workers and their families. Last year, America spent a total of $458 billion on health care. That's a higher percentage of our gross national product than is invested by any other western democracy.

Consider these statistics:

- Thirty-seven million Americans have no health insurance at all, and their ranks are swelling by one million a year;
- Three-fourths of the people without insurance are workers with families. This percentage is bound to worsen since most new jobs are being created in the service sector—a sector notorious for its lack of unionization and an indifference to workers' insurance needs.

Specific examples of how this health care crisis impacts on workers is documented in a new book, *Solutions for the New Workforce*, by Service Employees International Union President John Sweeney and Karen Nussbaum.

Among its illustrations of the family crisis facing far too many workers are:

- The clerical worker in Milwaukee who had a heart attack and bypass surgery. Although she held three part-time jobs, she had no health insurance because none of her jobs provided benefits.
- The baker on the night shift of Mr. Donut in Philadelphia, who was fired from his $17,000 a year job when he took three days off to take his infant daughter, suffering from Down's syndrome, to the hospital for emergency surgery. Now his wife supports him and their two adopted, disabled children on a secretary's salary.
- The former automobile worker who moved his family from Detroit to Los Angeles in search of work. Both he and his wife found jobs, but their combined minimum wage income fails to pay the rent. The family is now one of the Los Angeles homeless.

Today, no one is secure from an unexpected catastrophic illness.

We, in the trade union movement, believe that our dream of universal, affordable, and quality health care is the basic answer to America's deepening health care crisis. And I must say, many employers are beginning to join with us.

Those of us in the field of industrial relations and social science research should be asking ourselves, What will a national health care system mean to the collective bargaining process, to employment patterns, and to the distribution of earnings and wealth?

IRRA members, in their roles as researchers, can make a significant contribution to understanding and resolving the issues which I have described. For example, we need studies of such questions as the impact of child care facilities and family leave on worker productivity and the relative cost of health care under various proposed programs. In 1988, IRRA published a research volume on women and work, "Family Issues in Collective Bargaining and Legislation" was a suggested future theme.

I'm often asked, "What do women really want?"

Let me share with you what I believe are the logical answers:

- Women want opportunity.
- Women want to earn an honest wage for an honest day's work.
- Women want dignity.
- Women want to work in an environment free of sexual harassment and abuse.
- Women want to choose if, and when, we will bear children, without having that decision driven by the grim economics of the workplace.
- Women want to work in a safe and healthy atmosphere, free from life-threatening fumes and substances.
- Women want time—time to work, to raise our families, to cherish our spouses, and to care for our elderly parents.
- Women want changes that will translate into a world free of exploitation and degradation.
- Women want respect.
- Women want to achieve.
- Women, like all trade unionists, want what's best for everyone.

Put simply, women want equality. We ask for nothing more than that; we deserve nothing less.

In closing, I would like to issue one challenge to the IRRA. During my term of office, as both President-elect and then President, over this two-year period I heard many times, "Why can't we get more labor people involved in the IRRA?" "Why can't we get more practitioners to participate?"

To increase labor participation, we have to reach out to labor in a meaningful way. We have to be sensitive to the issues that both affect, and are important to, the labor movement. Not serving table grapes at receptions or dinners would be one small example.

I commend David and Marion (I know what a nightmare it has been) and our officers for moving this meeting from a site that was on the boycott list of the AFL-CIO because of a labor dispute between SEIU and the Portman properties. Anyone associated with industrial relations should be aware of union sensitivity to organizations on the AFL-CIO boycott list. When a labor dispute exists, that alone should be reason for moving a meeting that is expected to attract labor representation, without anyone saying that they "want to investigate" the issue.

Knowledge of a boycott or industrial dispute ought to be reason enough in itself.

In closing, I would suggest that the IRRA try to reach out to labor people by:

1. local chapters holding programs of particular interest to labor people;
2. union people and practitioners ensuring full access to participation at all levels of the IRRA;
3. national meetings scheduling more subjects of particular interest to unionists and practitioners;
4. labor people and other practitioners participating on the panels at the national meeting and in programs at chapter level; and
5. issues of special importance to the labor movement being taken into account in both content and logistical planning for meetings.

I have thoroughly enjoyed my year in office, although I must confess that I am glad it has come to a close. I did take my responsibility seriously. I did, personally, visit more local chapters, I have been told, than any other IRRA president. I tried to make myself available as much as was needed both to the staff and to the membership. I certainly hope that my term of office did make a small difference in a positive way.

I want to thank the staff, David, Marion, and Marge for all of their help; as well as Dan O'Brien, outstanding Chair of the subcommittees which met diligently. I hope that their work will continue as we move toward implementing the Kerr-Dunlop Report. Although this is my final day in office, I do commit myself to work with our new President, Bob McKersie, President-elect Jim Stern, and the incoming Executive Board.

I do look forward to seeing all of you at the spring meeting in Buffalo.

II. DISTINGUISHED SPEAKER ADDRESS

Remarks

THOMAS R. DONAHUE
AFL-CIO

Thank you for inviting me. I'm glad of the opportunity, as we close out the year and the decade, to visit and to offer a few thoughts about things that have happened over the past 10 years, and how the labor movement has responded to them, and also about things that we hope will happen—and that we're going to try to make happen—over the next 10 years before we close out the century.

On the whole, the best thing to be said about the 1980s—looked at from a political and economic perspective—is that they're over. But the end is better than the beginning.

Two events early in the decade made it clear that the outlook was not favorable to working people, either at home or overseas.

In the United States, the new Reagan administration embarked upon an economic course designed to reduce inflation at the expense of high unemployment and designed to make the rich richer and the poor poorer—and it succeeded admirably. At the same time, it seized the first opportunity to intimidate workers by ruthlessly crushing the Air Traffic Controllers union and firing and blacklisting 11,400 of its members. Other employers, public and private, interpreted this as a declaration of open season on unions and, with some honorable exceptions, went all-out to block, weaken, or be rid of them.

In Poland, a Communist dictator declared martial law and suspended the civil rights of the entire populace in order to strangle the fledgling union, Solidarity, in its cradle.

A "bad start all around," and how it's all going to eventually turn out remains to be seen. But the evidence of the 1980s goes a long way to support the view that in the end, trade unionism—and the freedom

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of the human spirit which is its defining characteristic—will not only survive, but will triumph.

Adversity does have its uses. If it's true that the vitality of nations and institutions is best measured by the way they respond to challenge, then the labor movement is in better shape today than ever before. Its vitality is being demonstrated and making itself felt around the world, reshaping whole societies and creating new economic and political systems.

Here at home, despite the problems of the past 10 years, our movement is in fine shape. Our unity and solidarity are higher than ever in my lifetime.

With the reaffiliation of the UAW, the Teamsters, and the UTU and with the chartering of the Locomotive Engineers, the Writers Guild East, the ILWU, and the Mine Workers, we've achieved a greater degree of internal unity and solidarity than ever in the past. Instead of falling apart, our unions are pulling together as never before—and that unity is manifesting itself in our legislative and political activities, in our strike support and strategic approaches work, and in our organizing activities.

The decline in union membership appears to have turned around, and in terms of absolute numbers, though obviously not in work force percentages, 1989 set an all-time record for AFL-CIO per capita, with a monthly average of 14,158,000 members—1 1/12 million higher than in 1955 and 1957 when all the same major affiliates were last within the federation.

That turnaround is an all-important beginning to our efforts to reverse the diminution of our numbers as a percentage of the work force. I've read the dire predictions of several respected academians about what percentage the number might reach by the year 2000, all things remaining constant, but the reality is they won't. As Lane Kirkland has pointed out, any urban planner of the 1880s could have predicted that, all things remaining constant, the multiplication of horse-drawn carriages would have left our major cities covered by several feet of manure by the 1940s. But there can, of course, be no question that to remain a major economic, political, and social force in American life we must begin to grow and to move toward the percentage strength we once enjoyed.

Without that growth we cannot drive the wages and conditions of industry, we cannot benefit our members or the unorganized, we cannot be the brake on corporate greed or the governor of corporate exploitation that we have been through all of the past decades. The good news of the 1980s and 1990s is that we are seriously trying to do that.

In the 1980s, we have reversed some serious setbacks and restored some ancient losses. For example, the Clothing and Textile Workers won contracts with J.P. Stevens after 17 years of effort. Workers at the former Kingsport Press in Tennessee voted overwhelmingly for representation by the Aluminum, Brick and Glass Workers, 25 years after four unions were decertified there. Air traffic controllers voted to raise the union banner again only six years after Mr. Reagan thought PATCO was dead and buried.

After years of dogged organizing struggle and months of negotiations, Hotel and Restaurant Employees won a first contract for Yale's clerical workers, AFSCME won a first contract for 3,500 office and professional workers at Harvard and Service Employees won a similar victory at Cincinnati.

On the campus, as in the health care industry, the organizing door is wide open from coast to coast, which is undoubtedly why the American Hospital Association keeps us mired in litigation about rulemaking. Clearly, the question is not about the best way for the NLRB to fulfill its responsibility to promote collective bargaining, whether by unit rulemaking or on a case-by-case basis; the search of the AHA is for the longest, most drawn-out, most discouraging way.

Our unions have spent the 1980s rethinking and redesigning our structures, our methods, and our techniques to fit the changing conditions.

We have developed vastly more sophisticated organizing methods and put in place internal procedures to assign organizing responsibilities and avoid wasteful competitive organizing efforts. We just last year created our Organizing Institute to train a whole new generation of union organizers and to offer high technology and highly sophisticated advice and consultant services to our unions.

Our "Union Yes" television ad campaign has been an enormous initial success by any standard and will continue into the 1990s.

On our own, away from the bargaining table, with our Union Privilege Benefit Programs, we've been breaking new ground in direct services to union members and finding new ways to involve more workers more deeply in union affairs. Many of our unions are establishing associate member programs that open their ranks, for the first time, to workers who don't yet have union contracts.

And it should be noted, rather importantly, that the 1980s saw the first strong evidence of improvement in public attitudes toward unions in more than 20 years, with successive increases of six percent and two percent in union approval ratings in the Gallup polls in 1983 and 1987 raising that approval rating from its all-time low of 55 to 63 percent.

So here at home we survived the worst the 1980s had to throw at us. We hunkered down through periods of concessionary bargaining, and I believe that the bad years of deregulation and industrial restructuring are mostly behind us.

Our institutions are leaner—but not only intact, they are now better geared to face the 1990s.

Meanwhile, some of the most dramatic advances in union activity have come overseas in the earliest and latest years of the decade. As the decade began, there seemed to be little awareness in U.S. government, business, or media circles that trade unionism even existed in Eastern Europe, Africa, Latin America, Asia, or elsewhere in the world. The only people who knew how widespread, how irrepressible, and how powerful trade unionism is as an expression of, and an instrument of, democracy, were trade unionists themselves.

The indispensable role that unions play in a democratic society has been brought into such sharp focus by events of recent months that it is now visible to all. There therefore ought to be concern—quite beyond our own—as to how we as a nation help the trade union movement maintain its vitality.

President Bush came to the AFL-CIO convention last month with appreciative words for Lech Walesa and for the AFL-CIO's faithful—and lonely—support of Solidarnosc since its inception. He honored Walesa with the Medal of Freedom and honored Lane Kirkland with the Citizens Medal in that same White House ceremony.

But he would have done well to listen attentively to the trade unionists from Chile, China, Lithuania, South Africa, and the Soviet Union, who also came to our convention to report, as Lech Walesa did, on the struggle for human rights in their homelands and to thank the AFL-CIO for its help. Help will, of course, continue to be forthcoming from America's trade union movement, and we'll continue to try to insure that at least some of our foreign aid dollars are spent in supporting the development of democratic trade unions and democratic institutions around the world.

But having delivered many kind words about our work overseas, Mr. Bush went back to the White House to veto a bill passed by large majorities in both houses of Congress that would have put an impartial emergency board to work to help resolve the then 8-month-old strike at Eastern Air Lines. Clearly this is an Administration that knows that Eastern Air Lines has nothing to do with Eastern Europe.

So strong and emphatic is Mr. Bush's support of unions in Eastern Europe that it's easy to imagine a scene in which one of his aides bursts into the Oval Office and says, "Mr. President, in the wake of Poland, Hungary, and Czechoslovakia, we've found another one: a country in which four million workers are denied the right of free association, eight or nine million more are denied the right to strike, and only three out of ten people without jobs get any unemployment compensation."

"Gee whiz," says the President, "just imagine a country like that! It's our duty to help, and by golly we're going to! Notify the Office of the Trade Representative. Alert the National Endowment for Democracy. See if Lane Kirkland will go to bat for these people and give them the help and encouragement and training programs, some of those radios and printing equipment that the Polish workers have been getting. And draft me a speech about worker rights in—by the way, what's the name of that country?"

Well, it's too obvious. There are four million U.S. citizens in 26 states who are denied the right to bargain collectively with their public-employer bosses. There are nearly nine million public employees in 45 states who are forbidden to strike, even under conditions they find intolerable, and only 10 to 20 percent of them are given any sort of substantial substitute.

The reality is that in the realm of industrial relations, America is living through a period of profound and extreme hypocrisy. And that, in our view, makes the work of the IRRA and its members more vital than ever in the 1990s. In the decade ahead, the workers of America, like those leading the drive toward democracy in other lands, need all the help they can get.

If this nation is to overcome its hypocrisy and is to renew its industrial democracy, it needs a new set of labor laws for the 1990s to bring its domestic social and economic policy into line with its foreign policy—and it needs more than that:

The nation needs a thorough examination of the whole idea of a social contract. It needs a reassessment of the nature and purpose of economic activity, and specifically, of the relationship between the individual and the economy.

Is the individual to be at the center of the economy, as all the great religions teach and all our humanist instincts dictate?

Or is the economy to be central and the individual merely its servant at the periphery?

If we believe that the economy ought to serve the individual and that his or her rights ought to be paramount, then why are so few voices raised against the open violation and perversion of labor laws in ways that help unfair employers to deprive workers of their constitutional right to free association, in ways that undermine the enforceability of labor-management agreements, and in ways that force workers who exercise their right to strike to risk permanent loss of their jobs? Why don't we hear cries of outrage against the denial of collective bargaining rights to those who work for state and local government?

How is it that Frank Lorenzo is given virtually limitless opportunities, under the special protection of the bankruptcy court, to destroy the livelihood of men and women who have given their working lives to building a great airline?

How does it happen that Paul Douglas Jr. is allowed to manipulate the structure of Pittston Coal for the sole purpose of evading corporate responsibilities? Why is he permitted to enforce his whims with the help of a private army, supported by scores and sometimes hundreds of Virginia state troopers, all in the name of protecting property? By that measure, we ought to do everything we can to make sure Mrs. Marcos gets her shoes back!

What's in question, both at Eastern and at Pittston, is the limit, if any, of corporate power. Frank Lorenzo and Paul Douglas Jr. refuse to acknowledge any limits at all.

But does capturing temporary control of a majority of boardroom votes carry with it the right to dissolve assets, repudiate agreements, and trample on human rights and weaken our communities?

I have a dream that some day I'll see a corporate report that boasts about the number and quality of U.S. jobs created in the previous year, as well as the number of dollars accumulated. We have a long way to go before that becomes standard procedure in the business community.

Other countries protect their societies against their Frank Lorenzos and their Paul Douglases. It is time for this country to move toward establishing a civilized standard of corporate social responsibility.

It is clear to me that there is agreement on the need for, and the appropriateness of, such a standard among the citizens of this nation. The problem is to translate that into a societal standard to which adherence is commanded by law and by social sanction.

And I'd like to suggest to you that is the one of questions for the 1990s—for economists, legislators, and environmentalists and for industrial relations practitioners, researchers, and educators. What laws would appropriately command the fulfillment of corporate responsibilities to the employees, to the stockholders, and to the community? And how do we develop the societal attitudes which would support the enactment of such laws and enforce social sanctions against those who fail to adhere to them?

In the industrial relations world of 1989, it's clear that current laws are not sufficient, and thus far the public seems to have an enormous tolerance for unfairness when it is visited upon others, or at least, the ability to largely ignore it.

In the years of the 1990s, it's going to be our role to force the nation first to focus on a number of industrial relations questions and then to address them through legislation and through societal actions.

We hope that the members of the Industrial Relations Research Association will join us in asking the questions and in submitting them to the vigorous examination of scholars and practitioners. They deserve the fullest exposition in terms that can serve as a basis for public discussion and remedial legislation.

We hope you'll join us in asking why, of all the articles of the Bill of Rights, is the First Amendment, the right of free association, the right to join or organize a union of one's own choosing, so hedged about with legal traps and minefields?

Why is it that Americans can speak, they can publish, they can vote, they can worship, they can maintain arms, they can resist wrongful search and seizure, they can run for public office and ride in the front of the bus without anything like the obstacle course that they face when they sign a union card?

If we can exercise all of our other constitutional rights without crippling qualifications, why do we have to have cards signed by 30 percent of the work force to get an election, and then find that a majority of the votes only opens the way to years and years of un-due processing of endless unfair labor practices and refusals to bargain?

Why not have recognition by card-check? Why not recognize the existence and legitimacy of a union that has something less than a majority, while it builds to a majority?

Why not a supplementary system that could provide workplace services for the 30 or 35 percent of the people in most workplaces who'd like to have a union, a group, or an association independent of the boss, in which they could insure that their voice is heard and their contribution to workplace democracy is made?

Why not put some teeth in the idea that the boss can't stamp out the sparks of democracy by firing the members and supporters of that union? Why not return to the intent of the law, which was to encourage, rather than sabotage, the practice of collective bargaining?

And while we're at it, why not acknowledge the property right that a worker holds in his or her job? Why not follow the lead of other western nations in holding that the job is not exclusively the property of the foreman or the biggest stockholder or the court, and certainly not of the scab? Why not hold that the person who does the job has a definable, defensible property interest in that job? Or, are we forever fated to be locked into a master-servant relationship defined in English common law as a fitting successor to serfdom?

And why not ask where the line should be drawn on the power of property rights to override human rights?

If the only way to secure justice is to establish property rights in one direction and limit them in another, what's the best way to go about it?

Among less global but equally important questions we ought to examine in the 1990s is our wage theories and the question of how the advent of the two-earner family and the increasing use of household incomes as a statistical staple relate to the vanishing concept of a living-saving family wage. What wage theories will replace it? What mix of social services and job benefits are needed to supplement the paycheck?

How do we deal with the basic educational needs and the occupational training and retraining programs needed in an age of transition and rapid-fire technological development, the average span of employment cut from ten years to three or four?

How can many of our unions achieve a greater voice in the workplace and gain greater control over work processes and corporate decision making in order to humanize those processes and decisions?

In a large number of labor-management experiments with real participation and with joint decision making, we have seen firsthand that efforts to build a strong worker participation program and efforts to build and maintain a strong and effective union can go hand-in-hand and achieve great success on both counts.

We have no fear that real interaction with fair employers will diminish the strength of our unions. The business of seeking a stronger voice in workplace decision making and a larger share of the profits is not so fragile a flower as all that. What is clear is that a strong union role in a sound worker-participation program can strengthen the union itself, and the company too, in ways that confrontation never can.

What's the best way then to make worker-participation programs rewarding both in terms of efficiency and productivity and personal satisfaction and advancement? Sadly, all too often, the participation discussion gets lost in a sterile, semantic debate about cooperation versus conflict. The reality is that negotiations and industrial relationships are never based on someone's desire to have one or the other. Those relationships are based on the recognition of dignity and equality by both sides. If they are not, there will be conflict.

But with such recognition, all manner of real worker participation is possible, with enhanced rewards for all. How else can we wrestle with the old and the new collective bargaining issues as two-tier and as concessions fade, and as child care and family issues emerge, and as we examine sometime later in the 1990s, the basic questions of hours of work, the shorter workweek, and education time offsets?

The challenges for the labor movement in the 1990s are, first and foremost, to grow again and grow importantly so as to put in place negotiating strategies which will enable us to restore real wage growth and to capture a larger share of the profits; to enact laws which will give public employees the rights now denied them; to establish our unions as the best vehicles for training and retraining and thereby enhance the work lives of our current members and attract new members; to insure the openness of our institutions, both our unions and our workplaces, and to continue within those institutions to be the vehicle for the advancement of women and minorities to all job and union leadership levels.

In collective bargaining, the challenge will be to wrestle with the health care cost issues until they are one day lifted from the bargaining table. The further challenge is to match our bargaining strategies with those of the restructured corporations which can well afford huge losses in one struck plant, or one corporation division, while the others subsidize the losses.

That's the lesson of Greyhound, of Pittston, of Texas Air/Eastern, of dozens of other confrontations of the 1980s. The employers have upped the ante and, sadly, we have to be able to match them. The result, of course, is bad for the nation and the economy. So we'll have to make it clear to the nation that the choice to escalate conflict in industrial relations matters is the choice of the nation's employers, the choice of the Teeters, Douglases, and Lorenzos.

That choice is being made every day in a thousand ways by employers who pursue an antiunion strategy, who pursue a "union free environment," who seek to propagandize, litigate, and legislate against workplace democracy.

That choice of conflict is also being made by employers who ship our jobs overseas, who contract out union jobs to nonunion contractors, who carefully and ever so gradually shift production from the union to the nonunion side of the house.

For our part, whatever our percentage of work force representation, we'll always be able to deal with conflict. In many ways, it's the easy way to go.

But whatever its effect on us, those of you who make up the rest of the labor-relations community need to examine its effect on the economy, its effect on nonunion workers and, in the final analysis, its effect on democratic structures in the nation.

Equal in importance to your analyzing the possibility of our continuing diminution as a percentage of the private sector work force, ought to be your examination of an imagined "post-union" society in which we rely on the free market and the good will of employers to treat workers fairly.

The challenge of the 1990s for the scholars and practitioners in this room is to make the case for rational relationships in labor movement settings, to analyze the good business reasons and competitive reasons for rational relationships, to do the case studies that demonstrate the long-range futility of human resource programs and employee involvement programs which are cynical in concept and manipulative in execution, and which have fallen by the wayside by the thousands.

Why aren't there more studies of the competitive advantage conferred by sound worker participation and shared decision-making programs?

On another aspect, why don't the legally inclined among you analyze why the people who gave birth to mediation and arbitration methods are now so bogged down in the complexities of an antiquated labor relations system that we're not even examining the explosion of alternative dispute-resolution experiments going on in every field but our own?

Meanwhile, the BNA *Daily Labor Report* faithfully chronicles every day another decision by a Circuit Court ordering some workers restored to a job they lost six or seven years ago!

We in the AFL-CIO are painfully aware of how futile it would be, in the present political climate, for us to offer moral exhortations about fairness, much less to offer legislative proposals that would face a certain veto.

We need you to produce the academic and philosophic analysis, the econometric studies, and socioeconomic analyses that can demonstrate the economic vitality and business efficiency of organized workplaces, expose the weaknesses of current laws and systems, and propose the new and supplementary schemes for effective workplace democracy.

Those studies just might lead the nation to a general resolve to achieve fairness among ourselves and to share the blessings of liberty among ourselves and our posterity.

That is, I submit, a whole different hope for the 1990s, than the reality produced in the 1980s by our adherence to trickle-down economics and our devotion to the further enrichment of the already rich.

Surely, we, as a nation, can do better!

III. AIDS IN THE WORKPLACE

The Economics of HIV Testing in Employment Settings

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According to a number of recent surveys, up to 50 percent of adults in the U.S. believe that employers should test their employees for infection by the human immunodeficiency virus (HIV) (Blake and Arkin, 1988). Currently, however, only 1 to 2 percent of American employers require HIV tests as a condition of employment (Fortune Magazine, 1988).

The objective of this paper is to analyze HIV testing in employment settings to shed light on these attitudes and practices and on the apparent discrepancy between them. Our analyses indicate that:

(1) from the point of view of most profit-maximizing employers, HIV testing is *not cost beneficial* given relevant estimates of the prevalence of HIV infection; and

(2) in most states, and particularly those in which the incidence of AIDS is relatively high, employers are legally prohibited either from testing for HIV or from using HIV test results in making personnel decisions.

Background on HIV Testing

The two main HIV tests currently in use in the U.S. are the ELISA and the Western Blot (Table 1). The former is relatively simple and inexpensive while the latter is somewhat more complex and costly to perform and more difficult to interpret. Although both tests are highly accurate, neither is entirely free from error. For example, both have a non-zero probability of misclassifying individuals who *are not* truly

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HIV positive as well as of misclassifying individuals who *are* truly HIV-positive (Milke, 1987; Burke et al., 1988).

Table 1 reports two types of prices for the ELISA and the Western Blot: the price of test kits (which contain all of the necessary materials

TABLE 1

Selected Facts About HIV Tests

	ELISA	*Western Blot*	*ELISA/WB Package*
Description[a]	A simple test in which antibodies contained in blood that has been exposed to the HIV bind to an HIV sample in the test kit. The interpretation of results can be automated.	(WB) A complex test that identifies antibodies to the three major groups of proteins of the HIV. Test results must be interpreted by a skilled technician.	A practice in which individuals are initially tested using ELISA. Positive results are checked using Western Blot.[f]
Price of Test Kit[b]	$ 3.50	$50	—
Price Per Test			
Illinois Premarital[c]	$30	$60	$35
Department of Defense[d]	—	—	$ 4.40
False Positive Rate[e]			
under ideal conditions	1.0%	.5%	.005%
in actual use	1.7%	4.7%	.08%
False Negative Rate			
under ideal conditions	.4%	.4%	.4%
in actual use	.6%	9.3%	.6%

[a] Lawrence Milke (1987).

[b] Personal Communication, Irene Donovan, Du Pont Chemical, December 1989. Western Blot price is for an FDA-approved test kit. An alternative, non-FDA-approved test kit costs $40 per test.

[c] Bernard J. Turnock and Chester J. Kelly (1989). ELISA and Western Blot prices are averages from Illinois hospitals that offer the test. The test package price is from the State of Illinois counseling and testing program. These prices include the drawing of a blood sample.

[d] Lawrence Milke (1987).

[e] False positive and false negative rates are from Milke (1987). "In actual use" estimates cited by Milke are based on studies by the College of American Pathologists. The estimated false positive rate for the test package is based on the assumption that the test results are independent. Estimates of the false negative rate for the test package are based on an assumed population seroprevalence of less than one percent.

[f] The Department of Defense follows a testing protocol in which a Western Blot test is only performed after two positive ELISA tests. A positive Western Blot is then checked by performing another Western Blot test on a new blood sample. They find a false positive rate of .0007 percent. See Donald S. Burke, et al. (1988).

and reagents to perform the particular test) and the *overall* price of an HIV test (which includes not only the cost of the test kit but also the costs associated with obtaining and processing a blood sample and any record-keeping, communication, and follow-up counseling provided).

The low estimate of the price of an HIV test is the Department of Defense's negotiated contract price of $4.40 for an ELISA/WB package. The high estimate is the average price for HIV tests paid by individuals tested under Illinois' mandatory premarital testing law during 1988 ($35.00 for an ELISA/WB package). These estimates differ primarily because the Department of Defense price does not include the costs of taking a blood sample and of post-test counseling and because the Department of Defense effectively receives a quantity discount on HIV test kits (e.g., 1.2 million individuals were tested for HIV infection by the Department of Defense between October 1985 and July 1987; [Burke et al., 1988]). Similarly, the small difference between the price of a Western Blot test kit and the overall price of a Western Blot test reflects the fact that a Western Blot test can be performed on the same blood sample as the initial ELISA test (i.e., it is not necessary to incur the cost associated with drawing a new blood sample). None of the estimates in Table 1 include costs involved in maintaining the confidentiality of HIV test results.

The estimates suggest that the marginal cost of HIV testing is much lower for large firms that can negotiate a quantity discount and that routinely require blood tests from their employees than it is for other firms. Although the proportion of U.S. firms that require blood tests among their employees is not known, it is known that large firms are more likely to require medical exams than are small firms (Fortune Magazine, 1988). It therefore seems reasonable to suppose that large firms will tend to face a lower cost of HIV testing than small firms.

Both the false positive and false negative rates associated with HIV tests are quite low for the practical purposes for which employers might use them. For example, suppose the true prevalence of HIV were 0.012 percent in a firm of 100,000 employees. Suppose further that the firm decided to perform an ELISA test on all workers and a Western Blot test on those who tested positive with ELISA. Based on these assumptions and the figures in Table 1, this testing protocol would yield 17 HIV-positive individuals (i.e., individuals who tested positive on both the ELISA and the Western Blot tests), of whom 12 would be true positives and five would be false positives. There would be essentially no false negatives (i.e., 0.07 individuals).

If it were legal, and if a firm followed a policy of not hiring (or dismissing) individuals who tested positive for HIV on both the ELISA and Western Blot tests, the cost to the firm of Type I and Type II test errors would be small. As illustrated by the preceding example, false negatives, each of which could be costly to a firm (Bloom and Glied, 1989b), almost never occur. On the other hand, false positives, whose occurrence is also rather infrequent in absolute terms (though far less so in relative terms in a low prevalence population), may impose only a minimal cost on employers who are not negligent in the administration of HIV tests.

A fundamental premise of the ensuing analysis is that a profit-maximizing firm will want HIV testing to be a condition of employment only if the benefits of testing outweigh its costs.

Cost-Effectiveness of HIV Testing

Calculations on the expected cost to an employer of HIV testing appear in Table 2. The calculations are performed under two assumptions about the marginal cost of HIV testing: (1) the Department of Defense estimate of $4.40 for an ELISA/WB package (which is a lower bound for large firms that normally require blood examinations as a condition of employment), and (2) the Illinois premarital testing estimate (which is an upper bound for firms that do

TABLE 2

Costs of Identifying One True HIV Positive Individual Under Alternative Assumptions About the Prevalence of HIV and the Cost of HIV Testing (in dollars)

	True Prevalence			
	CDC (High)[b] .86%	Hay (Low)[c] .29%	U.S. Military[d] .14%	Blood Donors[e] .012%
Price of test[a]				
$4.40 package	500	1,500	3,200	36,700
$30.00 ELISA, $60.00 WB (if necessary)	3,700	10,800	22,400	259,000

[a] See Table 1. These figures are based on the "in actual use" estimates of the false positive and false negative rates associated with the different HIV tests. The figures change little if they are based instead on the "under ideal conditions" estimates.

[b] Assumes that 1.5 million Americans are truly HIV-positive in an adult population of 174 million people. This prevalence estimate is roughly the upper limit estimate by the Centers for Disease Control (CDC), (1987).

[c] Assumes that 500,000 Americans are truly HIV-positive. See Hay et al. (1988).

[d] Estimate based on Department of Defense testing of new recruits. See CDC (1987).

[e] Estimate based on testing of Red Cross Blood Donors in 1987. See CDC (1987).

not normally require blood tests among their employees). The calculations are also performed under varying assumptions about the true prevalence of HIV infection in the pool of individuals from which a firm's workforce is drawn. These assumptions about HIV prevalence range from a low of 0.012 percent (which represents the percent of blood donors to the Red Cross in 1987 who were HIV-infected) to a high of 0.860 percent (which represents the Centers for Disease Control [CDC] upper bound estimate of the percent of the adult U.S. population that is HIV-positive; [CDC, 1987]). We assume throughout that testing does not impose psychic costs on a firm's actual or prospective employees.

The figures in Table 2 make it clear that the expected cost to a firm of identifying an HIV-positive individual depends importantly upon whether quantity discounts are available and whether blood examinations are normally required. The cost of HIV testing is roughly seven times lower for such firms than for small firms that do not normally require blood tests. The cost of HIV testing varies even more sharply across the range of prevalence assumptions. To illustrate, for a firm that does not normally require its employees to undergo blood tests, it will cost an average of $3,700 to identify an HIV-positive employee if the relevant rate of HIV prevalence is 0.860; but if the prevalence rate facing that firm is 0.012 percent, the cost rises by a factor of 70 to $259,000 because the firm has to test many more employees to identify someone who is truly HIV-positive.

Although the costs range from $500 to $259,000, relatively few firms are likely to face testing costs at the lower end of this range. Most firms do not require their employees to undergo blood tests as a matter of course. In addition, the two highest prevalence rates in Table 2 are likely to be well above those faced by most employers since those rates include (1) a substantial number of "heavy drug abusers" (about 225,000) who are relatively unlikely to be active participants in the labor market (CDC, 1987) and (2) a non-negligible number of individuals who are too young, too old, or too sick (because they have AIDS) to participate actively in the labor market. In addition, most firms presumably recruit workers from a population with a lower rate of HIV prevalence than that found in the U.S. military. Indeed, the military draws a disproportionately large number of recruits from demographic groups among whom the prevalence of HIV infection is known to be relatively high: young males, blacks, and Hispanics. (Note, however, that the HIV prevalence rate facing a firm that does not test its employees for HIV will be positively related to the proportion of firms that hire workers in the same labor market and that do test their employees.)

Employer Incentives to Require HIV Tests

In earlier work (Bloom and Glied, 1989b), we estimated the difference in the expected cost of employing an individual who is HIV-positive and employing another individual who is identical in all productivity-related characteristics, but is HIV-negative. The difference in these employment costs mainly reflects the higher insurance, hiring and training, and absenteeism costs that the firm that hires the individual who is HIV-positive might reasonably expect to incur. The differentials are appropriately discounted and adjusted for the nature and magnitude of typical fringe benefit packages, the degree of experience rating in the determination of a firm's insurance premiums, and the likelihood that a seropositive individual will develop AIDS and become unable to work during his expected employment horizon with the firm. Our calculations do not include the potentially substantial costs an employer might perceive due to an irrational fear of contagion on his part or on the part of his existing work force or customers. Neither do our calculations account for any beneficial public relations effects of not requiring employees to undergo HIV tests.

Table 3 summarizes the *differential employment costs* faced by large and small firms (who differ, for present purposes, primarily in terms of the health and life insurance benefits they offer and the degree to which their insurance premiums are experience rated) in cities in which lifetime health care costs associated with AIDS are relatively low or high, i.e., between \$40,000 and \$80,000 per case (Bloom and Carliner, 1988; Bloom and Glied, 1989a). The expected employment cost associated with the characteristic of seropositivity ranges from \$2,400 for small firms in low-cost cities to \$31,500 for large firms in high-cost cities.

It is natural to compare the costs of identifying an individual who is HIV-positive (Table 2) with the reduction in employment costs a firm might expect to enjoy if it did not hire, or ceased to employ, that individual (Table 3). This comparison suggests that HIV-testing is not cost-beneficial for most small firms. The expected employment cost savings of \$2,400 to \$4,800 is far below the expected cost of identifying seropositive individuals in a low-prevalence working population: \$22,000 to \$259,000 (since it is assumed that small firms rarely require employees to undergo blood tests). Similarly, HIV testing is not likely

TABLE 3
Expected Employment Cost of Seropositivity

		High Cost City	Low Cost City
Size of Firm	Large (≥ 1000 employees)	\$ 31,500	\$ 20,300
	Small (< 100 employees)	\$ 4,800	\$ 2,400

Source: David Bloom and Sherry Glied (1989b)

to be cost-beneficial for most large firms, although the possibility of important exceptions cannot be ruled out as completely as it can for small firms. For example, the expected employment cost savings for large firms associated with identifying an HIV-positive individual (\$20,300 to \$31,500) only slightly exceeds the expected cost of identifying seropositive individuals if the true prevalence of HIV infection is 0.14 percent (even more so for a firm that faces the lower cost of HIV testing). But, the expected cost savings falls far short of the expected cost of HIV testing if the true prevalence is closer to 0.012 percent, a more reasonable assumption for most large firms, as argued above.

The Legal Environment and HIV Testing

Our analysis suggests that most firms have little incentive to require HIV tests. This finding is consistent with the relatively small fraction of firms that currently require HIV tests as a condition of employment, as noted earlier. But the firm's decision to test for HIV status is not as simple an economic matter as the foregoing analysis would seem to suggest. The current legal environment in many states and municipalities imposes a variety of constraints on the behavior of firms in this realm that would be expected to magnify the incentives that most firms already face *not to require HIV tests.*

Table 4 provides a list of states in which HIV testing is currently prohibited in virtually all employment contexts and a list of states in which HIV testing is not explicitly prohibited. Although HIV testing as a condition of employment is only specifically illegal in 10 states, it is effectively illegal for most firms in the 24 other states in which discrimination on the basis of an individual's HIV status is prohibited. Firms governed by Federal law (e.g., firms that hold Federal contracts or that receive Federal funds) also fall into this category. Even in those

TABLE 4
State Laws Pertaining to HIV Testing in Employment Settings
(AIDS incidence rates in parentheses)[a]

Testing Prohibited[b]		Testing Permitted: Cannot Discriminate[c]		Testing Permitted: Can Discriminate[d]	
Washington, D.C.	(89)	New York	(35)	Georgia	(17)
Florida	(25)	New Jersey	(28)	Texas	(14)
California	(20)	Nevada	(15)	Hawaii	(12)
Massachusetts	(13)	Maryland	(14)	Louisiana	(10)
Washington	(11)	Connecticut	(13)	Virginia	(7)
Rhode Island	(8)	Delaware	(11)	Alabama	(6)
Utah	(5)	Illinois	(10)	Mississippi	(5)
Wisconsin	(3)	Colorado	(9)	New Hampshire	(5)
Vermont	(2)	Pennsylvania	(9)	Tennessee	(5)
Iowa	(2)	Missouri	(8)	Kansas	(4)
		South Carolina	(8)	North Carolina	(4)
		Arizona	(7)	Ohio	(4)
		Oregon	(7)	Arkansas	(.3)
		Indiana	(5)	Kentucky	(.3)
		Michigan	(5)	Nebraska	(.3)
		New Mexico	(5)	Wyoming	(.3)
		Oklahoma	(5)	North Dakota	(1)
		Maine	(4)	South Dakota	(1)
		Minnesota	(4)		
		Alaska	(3)		
		Idaho	(2)		
		Montana	(2)		
		West Virginia	(2)		

[a] AIDS annual incidence rates per 100,000 population from September 1988-August 1989. See Centers for Disease Control (1989).

[b] See Arthur S. Leonard (1987) and Ingrid Bowleg and Bethany Bridgham (1989). These laws state, in general, that an employer may not require an HIV test as a "condition of employment."

[c] See National Gay Rights Advocates (1989). Based on state interpretations of statutes that prohibit discrimination in employment against individuals perceived to be handicapped.

[d] See National Gay Rights Advocates (1989). States without prohibitions against handicap discrimination in employment, or in which statutes that prohibit discrimination only apply to individuals who have an actual handicap, or that have antidiscrimination statutes that exclude communicable diseases.

states in which testing is permitted, a policy of testing individuals because they have characteristics that are correlated with being HIV-positive (e.g., gender, race, ethnicity, age, marital status, sexual orientation, etc.) may violate broader antidiscrimination statutes (Bloom and Glied, 1989b).

Legal restrictions on HIV testing or on the use of HIV test results in making personnel decisions thus reinforce the economic incentives against testing in 33 states and the District of Columbia (and in firms that must comply with Federal law). It is interesting to note that the incidence of AIDS in these state jurisdictions (i.e., the rate per 100,000 population at which new AIDS cases were diagnosed in 1988) is nearly twice as high as in the 17 states in which HIV testing and discrimination based on HIV test results are permitted. Put another way, the legal prohibitions on testing tend to be relatively weak in the jurisdictions in which the economic incentives to test also tend to be relatively weak.

Concluding Comments

Since HIV testing is not costless, profit-maximizing firms will only want to require testing among their employees when the benefits of testing outweigh its costs. Our analysis suggests that this is most likely to be the case for large firms that already require their employees to undergo blood tests, for firms that recruit workers from populations in which the prevalence of HIV infection is relatively high, and for firms that are subject to relatively large increases in their health insurance and other employment costs if one of their employees subsequently develops AIDS.

Our calculations indicate that most firms (especially small firms) are unlikely to find HIV testing cost-beneficial in purely financial terms. In addition, the incentives against testing are strengthened in most states by laws that make it illegal either to require testing or to base employment decisions on the results of HIV tests.

HIV testing is examined in this paper from the point of view of profit-maximizing firms that are trying to avoid bearing costs associated with the HIV epidemic. But it is worth remembering that private firms are not the only entities that have an interest in HIV testing: private individuals and public policy makers also share an interest in this issue, although one that likely has some different roots than pure cost shifting.

Individuals may choose to be tested to gain information they can use to avoid infecting others or to take advantage of the possible prophylactic effects of new drug therapies for the treatment of AIDS. The interest of public policy makers in HIV testing derives not only from concern over the distribution of costs associated with the HIV epidemic, but also over the future magnitude of those costs. For example, if a social policy of encouraging testing for HIV tempers the future course of the epidemic by lowering the rate of high-risk activity, it may moderate the epidemic's overall economic impact. However, if the use of HIV test results in employment settings discourages high-risk individuals from learning their HIV status, policy makers may concurrently choose to prohibit the use of test results in employment decisions. Profit-maximizing firms do not incorporate an interest in the effect of HIV testing on the rate of new infection in their decisions about whether to test their own employees for HIV. These differences in objectives may help to explain why the fraction of individuals who support HIV testing is far greater than the fraction of firms that require HIV testing among their employees; it may also help to explain why the use of HIV tests is effectively prohibited in employment settings in a majority of states.

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Workplace AIDS Policies: Formality and Reality

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AIDS is a relatively new workplace problem. Only a small proportion of companies is aware that they have had an employee with AIDS. Policies relating to AIDS are spreading but are far from universal. Predictably, at this embryonic stage, much of the literature has been devoted to, first, the legal constraints on management action, and second, policy prescriptions, ranging from general guidelines to model policies (AMA, 1988; Banta, 1988; Brown and Turner, 1989; Magnus, 1988; Puckett and Emery, 1988). However, little attention has been paid to the actual practices of companies. This paper seeks to begin to remedy this deficiency, exploring the ways in which management practices may be in accordance, or out of step, with the law, government regulations, and formal company policies and ascertaining the reasons for any disparities. This is of obvious importance to public and corporate policy makers.

Theoretical Framework

The purpose of the theoretical framework is to facilitate a theoretically sound analysis of the differences between policy and practice. As a preliminary matter, the scope of the research requires delineation. AIDS policies are defined as any policies bearing on AIDS, whether or not they are included in a specific AIDS policy. This is in recognition of the fact that governments and many organizations have developed relevant, but more general, policies, covering for example, life-threatening illnesses, handicaps, discrimination, safety, and benefits. The policies studied in the present analysis fall into two categories. First, there are policies governing the prevention of AIDS in the workplace, including those concerning failing to hire or firing AIDS patients, AIDS testing, protection against the spread of the condition at work, and education. Second, there are policies intended to facilitate living with AIDS in the workplace, covering education and

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coexistence requirements for noninfected employees and benefits and confidentiality for the infected worker.

In attempting to explain deviations of practice from formal policy, a multidisciplinary framework is adopted, drawing on economic, sociological and organizational behavior literature. Fundamentally, the extent of compliance with public and corporate policy is believed to depend on the communication and control mechanisms used to publicize and enforce policy and the conduciveness of the environmental context in which they operate.

The relevance of communication networks arises out of specialization within the economy and society that has a tendency to lead to deliberate or unintentional action by firms in contravention of public policy and by groups within companies against corporate policy. Vertical communication facilitates compliance through informing subordinates of the policy. The provision of information may also induce greater commitment to policy. Horizontal communication can reduce unintentional errors through information-sharing, enabling better-informed decisions to be made, and possibly by the application of wider knowledge and more skill to relevant situations. Deliberate disregard for policy may be averted if communication is able to reduce interdepartmental conflict and foster coordination by making each department more aware of the consequences of its planned actions. Crucial to effective communication is the attention and comprehension of the recipient of the policy message.

The degree of compliance also depends on the efficacy of the combination of control mechanisms employed. Controls may be categorized as procedural, economic, and normative. Procedurally, compliance may be sought through the design of programs for action in keeping with policy by monitoring, by investigations of deviations from plans in order to analyze the causes to ensure no recurrence, and by affirmative remedial action. Economic controls operate through establishing financial incentives, which may be positive or negative, for abiding by policy. The aim is to convince subordinates that the expected pecuniary and nonpecuniary benefits of compliance exceed the expected costs. Normative controls rely on a consensus of values between the policy makers and the subordinates. There may be shared norms concerning the substance of the policy or deference toward policy makers because of their status but without agreement on the substance of the policy.

Organizations and employees do not respond to communications and controls in isolation, however. Their reaction depends on other features of the environment. Compliance is greater where environmental pressures are in unison, rather than competitive, with the communication and control mechanisms. The institutional context, for example, defines the discretion, power, and priorities of subordinate units, which affects the potential for independent action. The economic environment affects the costs of employing AIDS-infected employees and the need to reduce costs, and hence, the incentive to ignore policies. The social context, including the community and professional and personal background of employees influences the normative reaction to AIDS policies.

Research Method

A semistructured interview approach was chosen in preference to a mail survey on the grounds that personal contact was more likely than an impersonal cover letter to build trust that the results concerning the sensitive matter of deviation from public and corporate policy would not be abused and would be nonattributable. This method apparently paid dividends since most interviewees appeared to be frank and honest and admitted to ignoring policy in some respect.

While the interview technique resulted in a smaller sample size than would have been obtained from a mail survey, it is not debilitating to the analysis. No claim can be made that the results are representative of the U.S. as a whole, but it still shows types of deviations that may occur, enabling the objective of the research to be achieved. Likewise, multiple regression analysis is not feasible to make the analysis more rigorous, but the sample size is large enough to demonstrate strong nonquantitative causal relationships.

The fieldwork was conducted in a large metropolitan area in the Midwest. The 34 organizations where interviews were conducted were chosen so as to include organizations with different communication and control mechanisms and environmental conditions. Variations in communication and control mechanisms, reflecting different legal regimes, were assured by selecting organizations in both the public and private sectors and in two states within the metropolitan area. Differences in the procedural environment were captured by covering organizations with contrasting degrees of centralization within the company. The social environment varied among organizations as a result of labor forces being recruited from different communities and having different occupational compositions. Economic environments differed through the selection of organizations from a cross-section of industries. A dozen were in the health care sector, broadly defined to include hospitals, nursing homes, retirement homes, blood donation centers, sports medicine clinics, and funeral homes. A further dozen were in manufacturing companies. The other 10 were in service organizations such as restaurants, health clubs, distributive outlets, financial companies, prisons, and government departments.

Interviews were conducted in the summer of 1989 with personnel in different organizational roles, depending on who was best qualified to respond to questions. Most commonly, human resource managers, safety personnel, medical staff, or line managers were interviewed. Each interview lasted between one and two hours. Where organizations had not dealt with some AIDS-related situations, such as whether to fire a person with AIDS, hypothetical questions were asked. On such occasions, interviewees frequently drew on their experience of handling other expensive and impairing life-threatening diseases. Their responses were remarkably similar to those of interviewees who had experienced the particular AIDS situation.

Disparities Between Policy and Practice

Arguably, the most important policies governing the spread of AIDS among the workforce relate to the ability of employers to fire or refuse to hire persons with AIDS. Organizations in the public sector or in receipt of Federal funds are subject to the Vocational Rehabilitation Act of 1973 which provides that they cannot deny employment to otherwise qualified individuals who are, have been, or appear to be, handicapped and whose major life activities are substantially limited as a result, unless the handicap prevents safe and effective job performance. In addition, reasonable attempts must be made to accommodate the handicap before an employer may refuse employment. Formalizing key court decisions, the Civil Rights Restoration Act of 1987 states that contagious diseases as well as impairments are covered by the 1973 Act. AIDS is therefore a protected handicap, whether or not impairment is involved. In addition, all organizations in one of the states covered are subject to a similar state law. The handicap law in the other state does not protect those with contagious diseases. However, some of those firms have corporate policies forbidding adverse employment action in AIDS cases.

In practice, a majority of the organizations are loathe to hire people with AIDS if they are aware of the handicap. A common response of employers is to "find a more qualified candidate" or to "find a reason why the applicant is not qualified." In some cases of "full-blown"

AIDS this may be legal to the extent that opportunistic infections prevent safe and efficient job performance. However, the failure to hire otherwise qualified individuals with "full-blown" AIDS or AIDS-related complex (ARC), or who are only HIV positive, is in contravention of public policy.

In contrast to the discriminatory tendencies apparent in the hiring process, there is widespread opposition to firing current employees who developed AIDS. Most organizations are happy to accommodate AIDS-infected employees where necessary by providing job transfers or leave, for example. Deviations from public policy tend to be limited to companies accommodating employees with AIDS before they are unable to perform effectively or safely; for example, this was true of a store and a restaurant chain where there was concern that customers would react negatively, and in another case where co-worker reaction was hysterical.

Employers might also consider testing for AIDS to prevent its spread. The results could be used in hiring decisions or to enable appropriate precautions to be taken in the workplace. Public policy does not preclude testing, but it does circumscribe its use. Organizations in the public sector and regulated industries are subject to the Fourth Amendment restriction that testing has to be reasonable at its inception and justified in scope. Essentially, this requires that the employer's need to test outweighs the individual's reasonable expectations of privacy at the time of the introduction of testing, and that the testing procedures are reasonable in terms of who is tested and the degree of invasiveness. In addition, in one state studied, employers are allowed to test only if being free of AIDS is a bona fide occupational qualification. More generally, employers have to ensure that testing does not have a disparate impact on a protected group, thereby breaching civil rights legislation. They also have to be wary of possible tort actions arising out of the testing process, such as invasion of privacy and battery. At the organizational level, many companies have a formal policy against AIDS testing.

Most organizations comply with public and corporate policy. A minority test for AIDS, but mainly for legal reasons. For example, some health care institutions test after needle-stick injuries to prevent infected workers from being placed in positions where they could transmit the virus to others. One company also tests employees being sent to overseas military bases, in accordance with government regulations. Some organizations test employees on a voluntary basis to allay the fears of co-workers who come into contact with their blood.

AIDS-prevention policies also include procedures published by the Centers for Disease Control (CDC) (CDC, 1985; 1987), and those of the Department of Labor (DOL) and Health and Human Services (DHHS) which are enforced by the Occupational Safety and Health Administration (OSHA) (DOL, DHHS, 1987). The recommendations mainly pertain to health-care workers who are advised to consider all patients as potentially infected with the AIDS virus by adopting universal precautions. These include, among other things, barrier protection where contact with patients' blood or other body fluids is anticipated and mouthpieces for emergency resuscitation. The CDC guidelines also include recommendations for workers in personal service, food service, and other occupations. Where body fluids may be exchanged, precautions similar to those in health care are recommended. Whenever there is a spill of body fluids, it is advised that it should be cleaned up with soap and water or detergent followed by disinfectant or bleach. (At the time of the research, general infectious disease standards were expected from OSHA but had not been finalized).

In practice, there are deviations from public policy, especially outside the health-care sector. In health-care organizations, there is generally strong adherence to universal precautions, although in one case protective equipment is optional when taking blood. In other sectors, there is widespread ignorance about appropriate protection procedures. In many cases there are no latex gloves or mouthpieces at first aid stations. Regardless of medical knowledge and equipment, it is common for employees to rush to stop a wound from bleeding or provide emergency resuscitation without stopping to use safeguards.

Education is a policy that can help prevent the spread of AIDS and also facilitate living with AIDS in the workplace. Public policy in this area is limited to the OSHA requirements concerning the education of health-care workers about the transmission of the virus and the need for universal precautions and CDC recommendations that personal service workers be educated. Most companies in the study have their own policies, which variously seek to educate employees about transmission mechanisms, precautions, and the general lack of risk in working with workers with AIDS.

Practice tends to fall far short of policy. A general problem is low attendance levels at meetings. Further, in some cases attendance does not translate into attention to speakers and videos or involvement in discussion. Other media fare little better: minimal attention is paid to

AIDS literature. Across organizations, educational practices conform to policy most in health-care institutions.

Policies also exist which make it possible for the employer to require employees to work alongside a worker with AIDS. Under OSHA regulations, an employee may only refuse to work where the refusal is in good faith, the employee reasonably fears death or serious injury, the employee has first requested the employer to correct the dangerous condition, and statutory enforcement channels would not eliminate the danger. Under the National Labor Relations Act, employees acting in concert may refuse to work only if they have a good faith perception that they would be exposed to a hazardous working condition. If education has taken place, absent the likelihood of an exchange of body fluids, the employee has little legal basis for objecting to a work assignment.

In practice, anxiety about AIDS and homophobia is frequently dealt with in accordance with policy. Education is usually the first step in removing irrational fears. Where that is insufficient, the tendency is to discipline the employee or tell him or her to quit. Less commonly, organizations may accommodate the anxious employee or move the person with AIDS.

Infected employees enjoy protection of benefits through the Employee Retirement Income Security Act of 1974. This law, which applies to all employers, prohibits discrimination against employees which is intended to prevent them from claiming their rightful benefits. In addition, some companies have policies pledging no AIDS discrimination in benefits provision.

In practice, no company studied discriminates against current employees to reduce the benefits to which they are entitled. Nor is AIDS explicitly treated differently in the benefit plans. However, many plans have characteristics that undermine the spirit of the corporate policies. AIDS-infected employees are frequently hurt by maximum limits placed on health-care costs paid by insurance; by limitations on medical and disability leave; by the exclusion from coverage of experimental drugs such as AZT; by the lack of, or delay in, the coverage of preexisting AIDS cases; and by life insurance companies requiring physicals for late enrollees or employees wishing to increase their insurance coverage.

Finally, living with AIDS among the workforce is facilitated by public policy regarding confidentiality of medical records. If true or false information is publicized regarding the private life of an employee about which there is no legitimate public concern, the employer is liable for actions in tort on the grounds of publicity to private life.

Company practice is usually strictly in accordance with the intent of public policy. Knowledge of the identity of employees with AIDS is generally on a restrictive need-to-know basis. Some companies leave it up to the employee to decide whom to inform. Most organizations go to great lengths to maintain secret written records concerning AIDS, variously keeping separate files under lock and key; having files accessible to only a few people; keeping private notes of the matter; or sealing the information in an envelope in the employee's medical file, for example. This is not to say that leaks do not occur. For instance, in one case a subordinate believed that he had a duty to tell workers in the same department about employees with AIDS, and in another there was a leak when the employee engaged the union to represent him in his dealings with management. More often, it is the employee or the family who releases the information.

Explanations of the Divergences Between Policy and Practice

The dominant factor determining the degree of compliance with policy is the economic environment. Profitability concerns are instrumental in causing practice to deviate from public policy concerning hiring persons with AIDS. Organizations are not willing to take on the burden of increased costs of health care, absenteeism, and reduced productivity, among others, inflated in some cases by the prospect of long tenure because of low corporate turnover rates. In addition, they are not prepared in some cases to pay for the negative productivity effects of co-worker anxiety and the loss of customers who do not wish to be served by AIDS-infected workers. The economic context also explains the limits on benefits which hurt employees with AIDS or other catastrophic illnesses.

At the same time, economics lies behind the compliance of organizations in the areas of testing and coexistence. Testing is not usually performed because of the expense of the tests, which is made more unprofitable by the technical limitations and the relatively small likelihood of positive results. Coexistence with AIDS-infected employees is encouraged because organizations prefer to assign people to jobs in order to maximize productivity rather than according to their anxiety over AIDS.

The social context plays a powerful role in the areas of firing, testing, and benefits. Management values result in a strong sense of humanitarianism, fairness, and loyalty toward current employees with

AIDS such that there is little discrimination. These norms are strong enough to offset the economic costs.

On the whole, employee values are less liberal than those of management. There is a greater tendency to reject individuals with AIDS rather than to be compassionate. This contributes to the disparity between the policy and practice of AIDS education. Employees' values cause them to refuse to acknowledge AIDS as a problem about which they should be concerned and to refrain from participating in AIDS education because they fear it might cause others (with similar values) to regard them as potential homosexuals or persons with AIDS.

The institutional context is vital to the outcome of hiring decisions. In some companies hiring is done by line management which is able and more prepared to introduce economic considerations and to neglect legal constraints.

Communication and control mechanisms are less influential factors in the determination of the degree of compliance because their power generally pales in comparison with the dictates of the economic, social, and institutional context. However, there are exceptions where their efficacy or ineffectiveness overrides environmental circumstances. Communications are more effective between government agencies and organizations and within organizations in the healthcare sector, helping protective practices to be relatively close to policy guidelines, while the disparity between protection policy and practice in other industries reflects poorer communication. Procedural controls by OSHA and health care facilities themselves in the form of monitoring and disciplinary procedures also contribute to the comparatively high degree of unison between education and protection policies and practices. Finally, economic controls, which are generally weak because of the small size of the penalties for policy noncompliance, are influential in the case of confidentiality, because of the potentially larger damage costs.

Conclusion

This study shows significant divergences between policy and practice. The implication for academic research is that there is a need for a broader survey to verify the results. To the extent that the results are representative of the U.S., there are policy implications. The major deviations of corporate practice from formal policy are in hiring, protection against the spread of AIDS, and education, especially outside health care. If society wishes to increase compliance, it needs to recognize that communication and control mechanisms have to be improved, assuming the environment is impossible to change. Communications between government agencies and companies and within companies need to be more effective concerning the duties of employers in hiring situations, in protective measures, and in the importance of education. Finally, there need to be enhanced controls, perhaps involving the establishment of appropriate standards where they do not exist, closer monitoring, and larger fines in order to dampen the impact of contextual pressures. Steps have already been made in this direction in the health care sector. Only when this is done more broadly will corporate practices approach the standards established in formal policies.

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Perceived Social Support and the Consequences for Nurses of Caring for People with AIDS

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The impact of the AIDS epidemic on at-risk populations (Curran et al., 1988), the economy (Bloom and Carliner, 1988) and the American psyche (Sontag, 1989) has been the subject of much attention in the decade of the 1980s. Unfortunately there has been little recognition of the effects on health care professionals of caring for AIDS patients (O'Donnell et al., 1987). Anecdotal evidence suggests that some nurses who care for patients infected with the HIV virus experience fear of contracting AIDS and strains in their relationships with family and friends over their professional contact with these patients.[1] The purpose of this paper is to explore the impact of care-giving to AIDS patients on nurses. A model is developed to explain the determinants of stress associated with AIDS care-giving by nurses. The model is empirically tested on a random sample of New York State nurses.

Model

Four categories of predictor variables are hypothesized to be associated with nurses' experienced stress resulting from caring for AIDS patients (referred to as "AIDS stress" in the remainder of the paper). The first set of predictors has to do with nurses' social attachments. A substantial body of literature suggests that social support (traditionally defined as the availability of others who are dependable, caring, and loving) positively contributes to psychological well-being and buffers the effects of stressors (Sarason et al., 1983).

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Building from this work, it is hypothesized that social support, broadly construed, is negatively associated with AIDS stress; it is expected that nurses who have supportive relationships with others in various domains of their lives experience less AIDS stress than those lacking in social support. Essentially, social support is a resource nurses can draw on to help them deal with everyday stressors, such as caring for AIDS patients.

The second set of predictors is concerned with the extent to which nurses are exposed to AIDS patients. It is hypothesized that the more nurses are exposed to the body fluids of AIDS patients, the more AIDS stress they experience. Nurses who have considerable amounts of exposure to the body fluids of AIDS patients are likely to view their risk of infection to be heightened; hence, they experience more AIDS stress.

Also important is the percentage of working time that a nurse cares for AIDS patients. The relationship between percentage time and AIDS stress is hypothesized to be curvilinear such that AIDS stress increases with increases in percentage of time caring for AIDS patients until some threshold is reached. Beyond that point, AIDS stress is expected to decrease as percentage of time caring for AIDS patients increases. Before the threshold is reached, the relationship is expected to be positive since it is likely that the more time spent caring for AIDS patients, the greater the perceived risk of infection. However, nurses who spend a lot of time caring for AIDS patients probably develop considerable expertise in handling these patients. In addition, perceived risk may decrease since past exposures to AIDS patients may have proved harmless. Thus, it is expected that after a threshold is reached, the relationship between percentage of time caring for AIDS patients and AIDS stress is negative.

The third set of predictors is concerned with the extent to which a nurse has negative attitudes toward groups that are overrepresented in the AIDS population. That is, homosexual men and intravenous (IV) drug abusers are at an increased risk of developing AIDS. Nurses who have negative views about individuals belonging to these groups may experience more AIDS stress simply because of their greater prevalence in the population of patients. Hence, it is expected that nurses who have negative attitudes toward homosexuals and IV drug abusers experience more AIDS stress than those with less negative attitudes toward these groups.

The final predictor of AIDS stress is nursing experience. Nurses develop health care facility-specific and general human capital as they gain increased work experience. It is expected that increased experience will lead to reduced experiences of AIDS stress because the nurses will be more knowledgeable about AIDS and the proper procedures to use in caring for AIDS patients.

Methods

Sample

Surveys were sent to a random sample of 1,600 registered nurses, all members of the New York State Nurses Association. Because AIDS patients are not uniformly distributed across the state but tend to be more prevalent in larger cities such as New York City, Albany, Syracuse, Rochester, and Buffalo, a two-stage sampling procedure was used. First, 800 members of the Association residing in those five cities were randomly sampled. Second, a random sample of 800 was taken of the entire membership throughout the state. This sampling procedure was used to increase the likelihood that the sample would contain nurses with a wide range of exposure to AIDS patients. Nurse administrators and educators were excluded from the sample. Reminder postcards were sent to the entire sample two weeks after the survey was mailed. Two hundred fifty-six surveys were returned, for a response rate of 16%. Missing values reduced the usable sample to 127 for the analyses reported in this paper.

Variables

Dependent variable. The dependent variable, *AIDS Stress*, measures self-reported perceptions of stress associated with caring for AIDS patients. A three-item scale was used (Cronbach's alpha = .73): (1) "I am very afraid of being exposed to the AIDS virus from my work as a nurse"; (2) "Being a nurse puts me at greatly increased risk of developing AIDS"; and (3) "It is likely that I will be exposed to the AIDS virus if I were to work with AIDS patients."

Independent variables. Social Support. Six indicators of social support were used. The first measured the extent to which nurses received support from their employing organization. Specifically, *Organizational Support* is measured with Eisenberger et al.'s, (1986) 16-item, seven-point scale (alpha = .94). Social support is measured with the scales developed by Sarason et al., (1987). This scale contains 12 items; six of which (*Social Support-#*) ask how many people provide a particular type of social support (e.g., "Whom can you really count on to help you feel more relaxed when you are under pressure or tense?"), and six of which (*Social Support-Satisfaction*) ask how satisfied one is, on a six-point scale, with that particular type of support. In addition, nurses were asked to indicate the extent to which important people in their lives supported their work with AIDS patients. AIDS-related support was measured along three dimensions: (1) from spouse or sexual partner, *Partner Support*, (2) from family (excluding spouse), *Family Support*, and (3) from friends, *Friends Support*. *Partner Support* was measured with a four-item, seven-point scale (alpha = .81): "My spouse or sexual partner: (1) acted differently toward me since I started caring for AIDS patients"; (2) "expressed fears that my exposure to AIDS patients may put *me* at risk for contracting AIDS"; (3) "expressed fears that my exposure to AIDS patients may put *him or her* (that is, your spouse or sexual partner) at risk for contracting AIDS"; (4) "encouraged me to try to limit my exposure to AIDS patients." *Family Support* (alpha = .79) and *Friends Support* (alpha = .83) were measured with similar items.

Exposure. *Exposure* was measured with the question: "To what extent does your work as a nurse expose you to the body fluids of AIDS patients?" Respondents answered on a five-point scale with 1 equal to no extent and 5 equal to a great extent. *Percent Time* caring for AIDS patients was measured with the question, "During the last six months approximately what percentage of your time at work did you spend caring for AIDS patients?"

Negative Attitudes. Negative views about IV drug abusers were measured with a three-item, seven-point scale (alpha = .72) called *IV Phobia*: (1) "If I found out that a friend of mine was an intravenous drug user, I would cut off the friendship"; (2) "Intravenous drug users are morally inferior"; and (3) "Intravenous drug users should be treated as criminals." Negative views of homosexuals were measured on a seven-point scale called *Gay Phobia* (alpha = .66) with three items from O'Donnell et al.'s, (1987) homophobia scale: (1) "Homosexuality is a natural expression of love and affection" (reverse scored); (2) "It would be upsetting for me to find out I was alone with a homosexual"; and (3) "My concept of mental health includes the possibility of a well-adjusted homosexual" (reverse scored).

Experience. Work *Experience* was measured in years.

The model was tested with the ordinary least squares (OLS) estimator. One-tailed t-tests were performed on the estimated coefficients because all have hypothesized signs.

Results

Table 1 contains the OLS estimates of the determinants of *AIDS*

TABLE 1
OLS Estimates of Determinants of AIDS Stress

Variable	Coefficient	Standard Error	P-Value[1]
Percent time	−0.033	0.014	.007
Exposure	0.897	0.333	.004
IV Phobia	0.190	0.094	.022
Gay phobia	−0.057	0.095	.274
Experience	−0.044	0.038	.124
Organizational support	−0.027	0.018	.077
Social support-#	−0.326	0.186	.041
Social support-satis.	−0.169	0.353	.317
Partner support	−0.192	0.077	.007
Family support	−0.043	0.093	.323
Friends support	−0.135	0.099	.088
Constant	20.194	3.088	.000

$R^2 = .42$
Adjusted $R^2 = .36$
$N = 127$
$F = 7.55$
[1] One-tailed t-tests

Stress. The equation is significant, and the model explains 36 percent of the variance (adjusted R^2) in the dependent variable.

We consider first the social support variables. Partial support was found for the hypotheses on social support. Organizational support appears to reduce *AIDS Stress*, although the relationship is significant only at the $p < .08$ level. The number of individuals from whom the nurse receives social support (*Social Support-#*) is an important factor in explaining variance in the dependent variable, although there was no support for the hypothesized relationship between *AIDS Stress* and satisfaction with received social support (*Social Support-Satisfaction*). Support for AIDS care-giving from the respondent's sexual partner (*Partner Support*) and friends (*Friends Support*) appear to be important factors in explaining *AIDS Stress*, although the latter coefficient is significant only at the $p < .09$ level. No support was found for the hypothesized relationship between *Family Support* and *AIDS Stress*.

The nonsignificant coefficient on Family Support may be due to collinearity among the AIDS-support variables, rather than there truly being no significant relationship between *Family Support* and *AIDS Stress*. The zero-order correlation between *Family Support* and *AIDS Stress* equals −.42, while the correlations between *Family Support* and *Partner Support* and *Friends Support* are .66 and .77, respectively. Thus, the high intercorrelations between *Family Support* and the other two AIDS-support variables may have produced the nonsignificant coefficient on *Family Support*.[2]

The exposure variables, *Percent Time* and *Exposure* to body fluids, are considered next. Partial support was received for the hypothesis on *Percent Time*. The reader will recall that a nonlinear (concave down) relationship was hypothesized for the relationship between this variable and *AIDS Stress*. We expected that stress would increase as the nurse spent increased time with AIDS patients, but at some point the relationship would inflect and stress would begin to decline. No support was found for a nonlinear relationship between *Percent Time* and *AIDS Stress*, so the model was re-estimated without the squared term. The empirical results show a negative linear relationship: As *Percent Time* increased, *AIDS Stress* decreased. This suggests that some of the negative effects of working with AIDS patients decline as nurses spend more time working with this population of patients. One explanation of this empirical relationship may be that nurses develop disease-specific human capital that increases their proficiency and reduces the uncertainty associated with caring for these patients. The hypothesis on the second exposure variable, that increased *Exposure* to body fluids of HIV-positive patients would produce increased *AIDS Stress*, received empirical support.

We consider next the two phobia variables. Partial support was found for the hypothesized relationships. As predicted, nurses who scored high on the *IV Phobia* scale experienced increased stress. The relationship between *Gay Phobia* and *AIDS Stress*, however, was nonsignificant.

No support was found for the relationship between *Experience* and *AIDS Stress*, although the coefficient possesses the expected negative sign.

Discussion

These results suggest that varieties of support may play significant roles in reducing stress among nurses who are exposed to AIDS patients. We found that *AIDS Stress* was reduced among nurses who reported receiving much social support in their lives. Nurses who were beneficiaries of caring and supportive relationships reported less AIDS-related stress than nurses who had more tenuous social support networks. Support from the employing organization, general social support, and specific support from sexual partners and friends with respect to the nurse's AIDS care-giving all appear to be important factors in reducing stress associated with caring for AIDS patients.

These results also suggest that negative attitudes toward IV drug abusers increased nurses' AIDS stress. Hence, it may be possible to reduce AIDS stress by trying to change nurses' negative views of IV drug abusers through, for example, educational programs. Finally, the results for exposure indicate that while increased levels of exposure to the body fluids of AIDS patients increased stress, the percentage of work time spent caring for AIDS patients had a negative effect on stress. More generally, this implies that the effects on nurses of caring for AIDS patients varies depending on the type and extent of exposure.

Acknowledgment

Thanks to John Delery for excellent research assistance.

Endnotes

[1] This information was obtained from discussions with nurses who have cared for AIDS patients.

[2] The reader is reminded that the "OLS estimator in the presence of multicollinearity remains unbiased" and the "R^2 statistic is unaffected" (Kennedy, 1984: 128).

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IV. STATE ECONOMIC DEVELOPMENT INITIATIVES IN EMPLOYEE TRAINING AND LABOR-MANAGEMENT RELATIONS

Ohio Economic Development: The Effects of State Intervention to Improve the Labor-Management Relations Climate

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The aim of the Office of Labor-Management Cooperation (OLMC) in the Ohio Department of Economic Development is to promote economic development and job growth through improvement of the Ohio labor climate, principally through the operation of regional tripartite labor management centers and county-level area labor-management committees (ALMCs).

OLMC was created by the state in 1983. It was preceded, however, by a number of earlier efforts to promote better labor-management relations in Ohio. The Toledo Labor-Management Citizens'

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Committee, founded in 1946 and supported by the city of Toledo, is the oldest organization of its kind in the country. During the early 1970s, Governor Gilligan initiated efforts to promote Quality of Work Life programs including in-plant, labor-management committees. Although this effort was disrupted when Republican James Rhodes defeated Gilligan in 1974, the idea of state involvement to improve the labor relations climate was firmly planted.

Except for the Toledo Committee, earlier efforts to improve labor-management relations in Ohio have been sporadic. The volatility of the state's economy helps explain this pattern. During recessions, when jobs were lost, there was pressure on public officials to "do something." As economic conditions improved, the desire to promote better labor relations dissipated. By the early 1980s, the missing ingredient—a strong motivation for a sustained effort in the area of labor-management cooperation—had been supplied by the Reagan Depression.

As early as the 1970s, other states affected by plant closings and high unemployment had begun to support programs to improve labor-management relations. Pennsylvania was the first to institute a formal effort. The MILRITE Council, established in 1978, grew out of discussions between the state Chamber of Commerce and the AFL-CIO.[1] Since then other states, including Ohio, have adopted labor-management-government partnerships as a tool for economic development.[2]

Ohio's economy, based on traditional manufacturing, was in critical condition by the time of the 1982 gubernatorial campaign. The state unemployment rate was nearly 15 percent. Candidate Richard Celeste campaigned on a platform of jobs and bringing Ohio back from this devastating recession. Celeste promised to "get labor and management talking" so they could change the "climate of labor relations" in Ohio.

The Ohio Approach to Promoting Labor-Management Cooperation

After his election in 1982, Celeste commissioned a survey of Ohio's business climate among existing businesses and of companies that had left the state. Although business perceived Ohio workers to be highly skilled and well-trained, they also reported a "hostile labor climate" in the state. The Governor brought together business, labor, and members of his cabinet to structure a response to this negative image and to initiate a statewide labor-management program. Two models for the program were considered: one was a centralized program in the existing Labor Extension and Research Service at Ohio State University; the alternative was a decentralized program of regional centers and area labor-management committees. In 1984, the governor accepted and promoted the decentralized model.

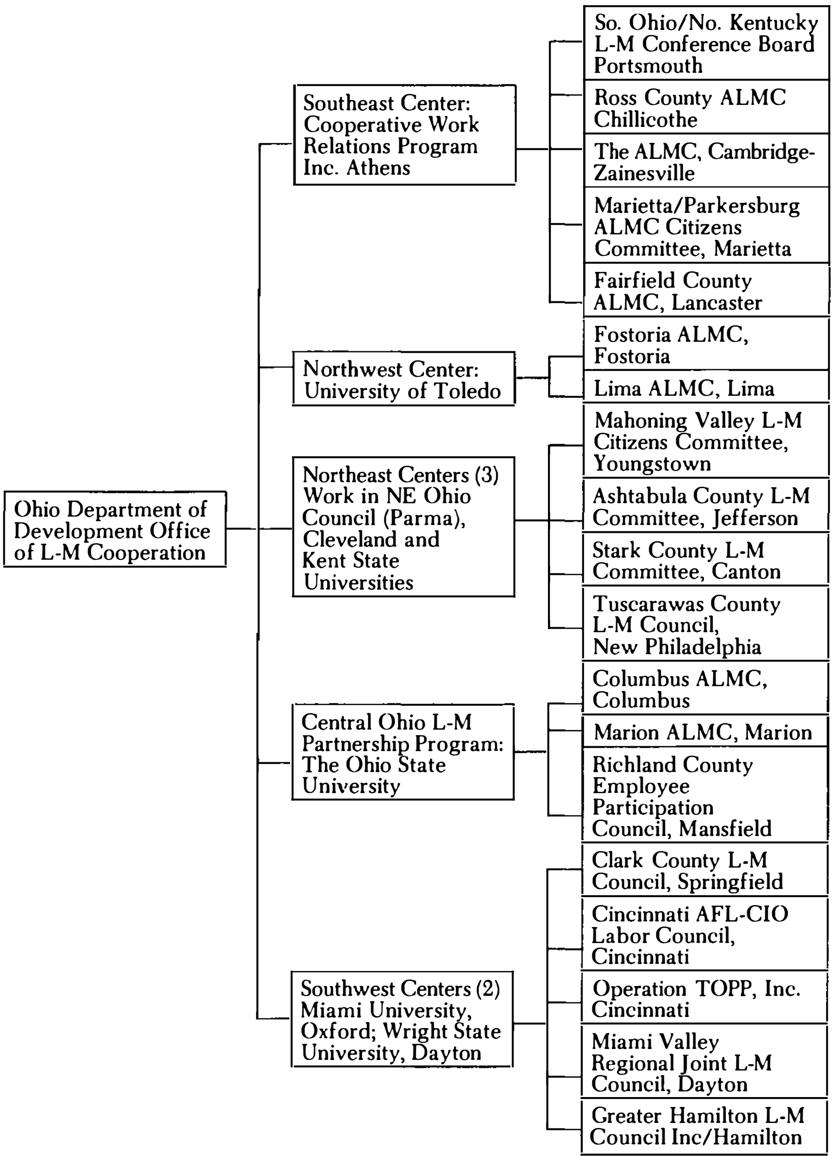
A $2 million biennial (July 1, 1985, through June 30, 1987) appropriation was approved to establish the labor-management initiative. During the first year of the program, the program manager, Karen Schwartzwalder, publicly promoted labor-management cooperation (LMC) and studied companies with successful employee involvement practices around the state. Forty case studies that documented good employee relations were developed from her visits and 19 of those were published and distributed.[3]

During this same period, the Governor formalized a 28 member tripartite committee (10 labor, 10 management, 4 cabinet members, and 4 legislators) to advise the administration, and particularly the OLMC, on "current and future strategies designed to improve the competitiveness of Ohio's industries and to promote job opportunities and job security for all Ohioans."[4] By January 1986, OLMC had set up procedures for the establishment of regional centers and ALMCs.

The first grants were approved in May 1986. By the end of fiscal 1987 (July), 16 ALMCs, eight regional centers, and two employee stock ownership centers had received grants. During the next two biennial funding rounds, the program budget was increased to $2 million per year.[5] Currently the state funds eight regional centers, 20 ALMCs, and one employee stock ownership center. Three committees that once received grant money are no longer funded. One continues without state assistance and the other two were disbanded.[6] (Figure 1.)

Centers and committees operate in five regions. The Northeast Region has three centers and the Southwest Region two, because of the concentration of employment in these regions. Six of the regional centers are located at universities. A tripartite nonprofit organization in Cleveland, the Work In Northeast Ohio Council (WINOC), was organized in 1981 with local support from the Cleveland Foundation. It successfully applied for funding as a state-supported regional center; and the Southeast Center, originally a part of Ohio University, is now an independent organization on the WINOC model. The centers provide expertise to ALMCs within their geographic regions and help develop new ALMCs. In addition, centers conduct research on current labor-management practices, publish case studies and news

FIGURE 1
Organization of Ohio's Labor-Management Cooperation Program
(Cir. 1988)



Note: Prepared by the Cooperative Work Relations Program, Mark D. Larson, Ph.D., Director, 614/797-2535.

letters, and directly assist employers and unions in the public and private sectors to implement work site employee involvement programs.

ALMCs assess the labor climate of their communities, offer counselling and training to improve it, and perhaps most important, provide information to the media and other interested parties to change incorrect perceptions of the labor climate in their communities. ALMCs meet regularly to exchange information and share concerns outside the context of an immediate labor dispute. They conduct public seminars on labor-management relations and more specific topics such as drug and alcohol abuse, facilitate in-plant training programs, assist dislocated workers, and work with area economic development professionals on specific projects. Many of the training programs are jointly conducted by a center and an ALMC.

Regional centers are funded without a necessary match, but ALMCs must have local funding to qualify for a state grant. The required amount of local match increases from 10 percent during the first year of operation to 50 percent in the fifth year. The state continues to fund effective ALMCs at 50 percent. In light of the recency of Ohio's program, no standard for "effective" has been clearly established. As noted above, however, not all ALMCs have continued to be funded.

The employee stock ownership (ESOP) center provides assistance and feasibility advice to employees and managers considering buyouts. Three employee ownership manuals have been written and distributed by the center. The center has facilitated the establishment of a network of employee owners and conducts training sessions for board members of employee-owned companies. The ESOP center has supplemented its state support with local foundation funding to expand the scope of its activities.

Grantees meet quarterly with the OLMC manager. They submit a yearly proposal that provides detail on planned activities, budget and staffing patterns, and board membership. In addition, each funded program must file a quarterly report with OLMC of activities and expenditures.

As labor-management programs have matured in Ohio, an increasing number of in-plant committees have been initiated with the encouragement of the Governor's Tripartite Committee. Over one hundred establishments have participated in labor climate assessments, and follow-up labor-management process training has been provided at about a third of the locations where the assessment has been completed.

In addition, several grantees have facilitated cooperative labor-management programs in school systems. A statewide labor-management education sector conference will be held in March 1990, and a network of educators, school management, and school board members is scheduled to meet regularly thereafter.[7]

Some Evidence of the Effects of Ohio's Effort

The sheer survival of new third party agencies, in an environment where there is some hostility from both sides of the table toward the idea of cooperation, is not an insignificant accomplishment. Survival is evidence that the Governor's Tripartite Advisory Committee believes continued funding is justified because the grantee has established a measure of credibility and legitimacy among the potential clients in its region. The political process underlying grant approval eliminates unsuccessful grantees.

The more pointed question is whether the general labor-management climate in Ohio has been improved by the program. Trying to answer this question now is probably premature. Nevertheless, several specific achievements illustrate what has been possible in Ohio.

As noted earlier, Toledo already had the nation's oldest area labor-management committee and an established network of management, union, and neutral industrial relations professionals. Yet this group had never before been collectively mobilized. The Northwest Center, housed at the University of Toledo, was an important catalyst. As a result of informal discussions at the first Northwest Center conference, a dozen union and management officials from large area auto plants mobilized themselves into a volunteer organization—the Working Council for Employee Involvement (WECI)—whose activities and meetings are facilitated by Center staff, but separate from it. WECI offers advice and training to smaller firms in the area (often suppliers) who are experiencing labor-management problems but lack the resources to hire professionals. Working together to help others has itself improved relationships among the participating labor and management professionals.

One accomplishment of this group occurred in 1987 after NHK Spring Company, a major Japanese auto parts supplier, purchased Mather Metals in Toledo. The plant typified a poor labor climate—it suffered two strikes in five years and had a negotiated work assignment system that eroded productivity. NHK told labor and management that without improved relations, the plant would close.

After union leadership approached them, the Northwest Center and WECI arranged for a Mather study group to visit other facilities where cooperative programs were in operation. Union and management professionals from GM, Ford, and Chrysler plants in the area provided leadership and training to the Mather group. Work assignment changes have been negotiated with team production being introduced. NHK has installed $2 million in new equipment and added 15 jobs.

One Ohio example shows that prior experience with labor-management relations is not a necessary credential for an effective ALMC director. The Stark County (Canton) ALMC director had no such experience. Currently, however, she is training labor-management committees at 11 sites. Her presence at regional conferences and workshops she has organized enhances public awareness of her ALMC. In addition, it has helped to establish trust in her capacity and ability to bring expertise, from outside if necessary, to bear.

One final example of a successful program is WINOC. As noted earlier, it has now acquired status as a regional center in the state program although it continues to receive local support, as well as fees from its clients. A recent study by the first author of this paper reviewed all 76 clients of WINOC and concluded, in part, that a critical factor in the long-term success of in-plant, labor-management committees is *intensity* of effort at the start up and *continued follow up* once the programs are under way.[8] A "culture barrier" is reached about 18 months into a program where the real issues of shared authority begin to be apparent to both labor and management. Without the support and assistance of WINOC follow up, in-plant programs hit a wall with no further progress and poor prospects for continued existence. Where WINOC follow up was employed, the chances for continued progress were more likely.

Focus of effort by WINOC is important. Each regional center receives about $150,000 per year in state support. Two or three professional staff members cannot possibly be all things to all people. As we noted with respect to the Northwest Regional Center, WINOC makes its greatest contribution by servicing smaller firms which lack the resources to develop labor-management programs themselves. This point should not be overlooked in any evaluation of labor-management cooperation efforts. Focus on specific problems and issues leads to success. A broadly diffused effort, at least at the present level of funding, appears to dissipate with little long-term effect.

Qualitative evidence of the kind discussed here is considerable and can only be touched on briefly in this paper. Independent reviews of particular pieces of the Ohio program have, however, begun to show a consistent pattern. Certainly not all efforts to promote better labor-management relations are equally successful, and not all regional centers and ALMCs are as effective as Toledo and Stark County and WINOC, but almost universally, those affected by the programs endorse them as effective agents for positive change.

Quantitative evidence

The quarterly reports of grantees referenced earlier provide a reliable measure of expenditure by region of the state and, to the extent that such data reflect a measure of effort, it is a starting point for what has been universally lacking in studies of this type—hard evidence. As we have already noted, the Ohio program is barely three years old, and in some parts of the state where program initiation was slow, effective activity is only now coming on stream. Judgment is premature. Nonetheless, we did examine, and will report here, the data that are available to assess the overall quantitative impact of the Ohio OLMC.

The Governor's stated motive for the program was to promote economic development and ultimately to create (or preserve) jobs in Ohio. There are certainly other ways to assess labor climate, such as measures of strike activity, grievance frequency rates, or unit labor costs. Given the Governor's motivation, however, the ultimate test is jobs. Employment *change* is therefore the dependent variable in this analysis.[9]

The independent variable of interest, of course, is expenditures (EFFORT) by OLMC in the relevant geographic area (statewide or Metropolitan Statistical Area (MSA)).[10] We estimated separate equations for the state as a whole, for each of eight MSAs, and for all eight MSAs pooled. In addition to change in *total* employment, we estimated a separate set of equations for change in *manufacturing* employment. Employment data for each area were available directly from the Ohio Bureau of Employment Security.[11] The eight major MSAs are Akron, Canton, Cincinnati, Cleveland, Columbus, Dayton-Springfield, Toledo, and Youngstown-Warren.

Although expenditure on LMC is the key independent variable, the single most important factor affecting employment levels and changes in Ohio is the general state of the U.S. economy. Changes in the economy are likely to swamp any effect the state's $2 million expenditure for LMC is likely to have. Therefore, U.S. Employment Change was inserted as a control variable in all equations.

In addition, a trend variable was constructed. TREND is simply the sequential number of the quarter under investigation. TREND is a proxy for a number of factors that might affect employment in the state. There may be a gradually improving labor climate in Ohio wholly independent of any state LMC effort. With the onset of the 1982 recession, the wage/benefit cost premium in Ohio relative to the rest of the nation accelerated its decline. The general decline in union power also had other effects on labor costs such as concessions affecting work rules (which would not be apparent from an examination of wage data). And finally, as job growth occurs in other parts of the country or world relative to Ohio, there will be a point when the relative advantage of location in Ohio (the Ohio "rent" factor) again becomes positive. Naturally, TREND will also pick up the effect that a labor-management program has as well, and as we anticipated, there is substantial collinearity in the two variables. For that reason we have estimated separate equations, first without TREND, and then with it.

Results. Table 1 reflects the results of the pooled equation. As expected, U.S. employment change is highly significant. In Equation I, EFFORT, lagged 12 months, has the expected sign but is not significant.[12] Interpreting the 0.0063 coefficient for what it is worth, it suggests that, on average, an expenditure of $1,000 will yield a 0.63

TABLE 1

Employment Effect of Labor-Management Expenditures Lagged 12 Months for Eight MSAs *Pooled* (N of Cases = 312)

Dependent Variable: Percent Change in *Total* Employment from Previous Quarter

Independent Variables	Coefficient (std Error) Equation I	Coefficient (std Error) Equation II
US total empl % chg from previous qtr	1.31 (0.043)°	1.29 (0.043)°
Effort ($ in thous) lagged 12 months	0.0063 (0.0045)	0.0007 (0.0052)
Trend variable (quarter)		0.054 (0.026)°
Constant	−0.43	−4.98
R-square	.76	.76

° Significant at .95 level

percent increase in employment in the MSA over what it would otherwise have been 12 months later. In Cleveland, that amounts to over 3,000 jobs. Many would argue that this would be money well-spent, but the lack of statistical significance for the coefficient obviously undermines any conclusion we can reach here about the usefulness of the expenditure.[13]

Whatever support Equation I provides for the proposition that state expenditures to improve labor-management cooperation produces more jobs is undermined by the addition of the TREND variable in Equation II. TREND accounts for concomitant changes which appear to overwhelm the EFFORT variable. It is not possible to conclude, therefore, that state expenditures had any effect on job growth or retention on the basis of the statistical evidence.

Turning to Table 2, the statewide equations, the results are similar. With respect to changes in total employment, the coefficient on EFFORT, lagged 12 months, is positive but not significant. When TREND is added to the equation, the effect of EFFORT is nil, as we anticipated in our preceding discussion.[14]

Finally, we constructed equations for each MSA independently with the view that the EFFORT measured by state dollars expended might not be a reliable measure of true effort expended. If such were the case, the effect of money well-spent would be obfuscated by the

TABLE 2

Employment Effect of Labor-Management Expenditures Lagged 12 Months for *Ohio Statewide* (N of Quarters = 39)

	Dependent Variable: Percent Change in *Total* Employment from Previous Quarter	
Independent Variables	Coefficient (std Error) Equation I	Coefficient (std Error) Equation II
US total empl % chg from previous qtr	1.31 (0.04)°	1.30 (0.04)°
Effort ($ in thous) lagged 12 months	0.0073 (0.0077)	0.0001 (0.0090)
Trend variable (quarter)		0.041 (0.027)
Constant	−0.43	−3.85
R-square	.96	.96

° = Significant at .95 level

less effectively managed regional efforts. In the resulting equations, not reported here, none of the coefficients on EFFORT approach significance, so no reasonable conclusion can be reached that suggests a difference in program and expenditure effectiveness across MSAs.

Conclusions

The evidence presented in this paper is mixed. On the one hand, the qualitative investigations of all three authors suggest a generally, though not uniformly, positive impact of the programs that have been initiated by the state. On the other hand, the statistical evidence does not provide unequivocal support for a conclusion that the LMC program has created or retained jobs for Ohio.

There are, of course, two possible conclusions that can be drawn from this evidence. First, and most likely, there is some modest improvement in the labor climate that is attributable, in part, to the LMC expenditures. Both because the program is new, and because other factors tending to improve the climate confound any modest effect it may have had, the statistical evidence simply does not show the results yet.

The real possibility that such programs do not in fact have an important effect cannot be dismissed, however. Many would argue that the state of the economy is what drives the quality of labor-management relations and that at most, programs to improve the labor climate are condiments that add nothing substantive to what would have happened anyway.

We are hopeful that Ohio's great experiment with state-supported programs to enhance labor-management relations will run long enough to reach some more definitive conclusion than we have been able to here.

Endnotes

[1] MILRITE is an acronym that stands for Make Industry and Labor Right in Today's Economy.

[2] In 1974, Ohio Governor John Gilligan began to structure a state labor-management cooperative project aimed at improving productivity and quality of working life in both the private and public sectors. He was advised by Ohio State University professor, Neal Herrick, who had facilitated QWL programs in Springfield and Columbus, Ohio. Governor Gilligan's program came to a halt when he was defeated by former Governor James Rhodes in the November 1974 election.

[3] Several companies did not approve distribution of their stories. Such concern for confidentiality remains a problem for research in this field.

[4] State of Ohio, Executive Order 85-58.

[5] The $2 million that Ohio provides, while modest, constitutes a substantially greater commitment than that made by any other state or the federal government. In FY 89, Pennsylvania appropriated $825,000 to its MILRITE Council; Michigan, $660,000; Illinois, $300,000; Minnesota, $187,500; Wisconsin, $50,000; and the Federal Mediation and Conciliation Service, $1,000,000.

[6] Five other existing Ohio area cooperative programs have never received funding.

[7] A broader public sector conference is being planned for January 1990 to discuss labor-management cooperation programs. This conference is being jointly planned by the State Employee Relations Board and the OLMC.

[8] *WINOC Review, Final Report*, Paul F. Gerhart, Project Coordinator, unpublished.

[9] *Change* was measured by the formula: (employment in the first month of quarter n) / (employment in the first month of quarter $n-1$) $-$ 1. Data were used for the period 1980-I through 1989-III for each major MSA, and for the state as a whole. State expenditures on labor-management cooperation began in 1986.
We also estimated the effect of EFFORT using employment *levels* in separate equations for each of the MSAs, and for the state as a whole, with results about the same as those reported here for *change*. Since the MSAs vary in size, the employment level variable could not be used in the pooled equations.

[10] Although precise data are available from each grantee concerning its expenditures, the regional centers typically operate in two, and in some cases four, different MSAs, plus areas outside of any MSA. Precise data on actual expenditure by MSA were not available. Our estimates are based on informed opinions by the authors about where a given regional center conducts programs and who its clients are. In one case, a center director provided his judgement on the distribution of effort by his regional center.

[11] The Ohio Bureau of Employment Security (OBES) generates monthly estimates of employment by MSA and by selected two-digit industries based on employer UC insurance payments. They kindly provided the authors with the data used here through the Center for Regional Economic Issues at Case Western Reserve University.

[12] As in all other equations, we lagged the EFFORT variable by both 6 and 18 months as well as the 12 months lag we have reported. Some lag in the effect of expenditures is reasonabble on theoretical grounds. The fit for a 12-month lag was substantially better than for a 6-month lag; the equations tended to deteriorate with an 18-month lag because significant expenditures began in 1987; therefore an 18-month lag limited us to only three or four observations where EFFORT was other than zero.

[13] We also estimated the same equation for *manufacturing* employment only, but space limitations preclude presenting it here. It is available from the first author on request. The manufacturing equation presents a somewhat different picture and increases skepticism regarding the overall positive effect of OLMC expenditures. The sign on the EFFORT coefficient is negative. These results are all the more telling considering that the majority of LMC effort is directed at manufacturing. On the other hand, two of eight cases studied for the *WINOC Review* cited earlier were the George Worthington Company, a national hardware distributor, and the East Ohio Gas Company. Thus, to focus entirely on manufacturing would be inappropriate.

[14] Again, the equations for manufacturing employment yielded results similar to those discussed in the preceding note.

A National Overview of State Labor-Management Cooperation Programs

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Over the past decade, more than a dozen state governments have initiated programs to foster improved cooperation between organized labor and private sector management. These programs, generally undertaken as part of a broader strategy to promote economic development, were created in response to economic stress—the long-term decline of state manufacturing and mining industries, high unemployment in the recession of 1981-83, plant closings and business bankruptcies, and the pervasive pressures of international competition. These states traditionally have had a high proportion of their labor force in manufacturing and have been heavily unionized. Convinced that a reputation for adversarial industrial relations was a barrier to recovery, the architects of these programs sought to change this negative image; stimulate economic development in specific communities by attracting and retaining businesses; increase job opportunity and security; improve productivity, output quality, and competitiveness in individual firms; and thus, enhance the overall vitality of the state economy.

In this paper, we briefly survey the development of these initiatives and describe what these states are doing today.[2] In a forthcoming monograph, we will provide a more detailed account of state activities across the nation, present in-depth analyses of the programs in five states, and compare different strategies to promote labor-management cooperation.[3]

Patterns of Development

Twelve states—Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, New York, Ohio, Pennsylvania, Tennessee, West Virginia, and Wisconsin—currently have state labor-management cooperation

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programs. We define such a program as state financing of a unit of government or a statewide independent entity to promote, on an ongoing basis, cooperation between labor unions and business management outside of the collective bargaining relationship.

These programs developed in two generations in a distinct geographic pattern. Initially, programs were established in four Appalachian states; then eight Great Lakes and midwestern states followed. (See Figure 1.)

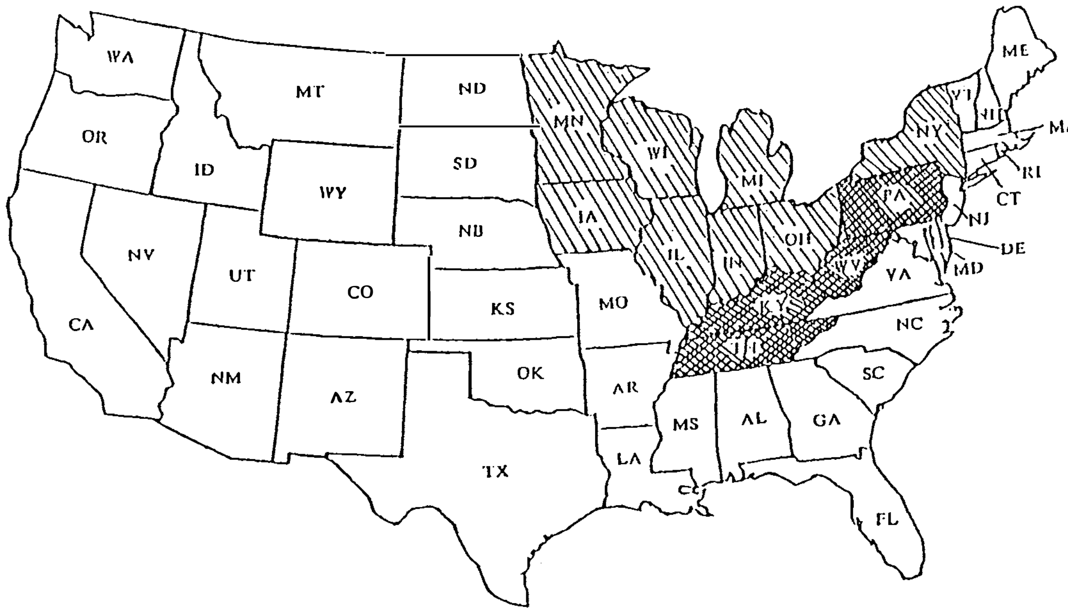
The first generation programs—initiated between 1976 and 1980 in Kentucky, Pennsylvania, Tennessee, and West Virginia—evolved slowly. They had no models from which to learn, and, since communication among program managers was limited, developed essentially in isolation. At first, the states formed statewide advisory councils of top business and labor leaders or held conferences for a broader segment of this leadership, activities requiring little or no state financing. In the early and mid-1980s, the first generation states added staff and began to assist area labor-management committees (ALMCs) and individual firms and unions. Pennsylvania also established a grant program to support ALMCs.

The second generation programs were initiated between 1982 and 1988 in Illinois, Indiana, Iowa, Michigan, Minnesota, New York, Ohio, and Wisconsin. Indiana, the first of these, developed a unique program structure—a state-supported, nonprofit organization to deliver technical assistance to unions and companies. The other second generation states adopted a package of program elements modeled after, and adapted from, the first generation's, including a statewide advisory council, a special office to promote labor-management cooperation, conferences, and technical and financial assistance to ALMCs, industry, and in-plant committees.

By the mid-1980s, state program managers were actively sharing information and advising each other on program design and management. To institutionalize such contact and promote their cause, they formed a new professional association, the Consortium of State Labor-Management Initiatives. These efforts, at the state level and through the Consortium, were encouraged, nurtured, and given vital technical support by the Bureau of Labor-Management Relations and Cooperative Programs, US Department of Labor.

The labor-management cooperation programs in these states have become well-entrenched government activities. Most have a statutory basis for operations, and most receive line-item appropriations in the state budget. The resources available to state labor-management

FIGURE 1
Geographic Spread of State Labor-Management Cooperation Programs



= First Generation: Kentucky (1976), Pennsylvania (1978), Tennessee (1980) and West Virginia (1977).

= Second Generation: Illinois (1985), Indiana (1982), Iowa (1987), Michigan (1987), Minnesota (1985), New York (1986), Ohio (1984) and Wisconsin (1987).

cooperation programs vary substantially, however. Currently, Ohio, with an annual budget of $2 million, has by far the most. Pennsylvania (which spends more than $1 million per year on the MILRITE Council and supports a growing program in the Department of Labor and Industry) and New York (which supports three related programs) are also well ahead of the rest with annual budgets of almost $1.4 million. Three states—Illinois, Indiana, and Michigan—spend approximately $400,000 to $700,000 annually. Five other states—Iowa, Kentucky, Minnesota, Tennessee, and West Virginia—spend in the range of $175,000 to $400,000 per year. Wisconsin budgets about $80,000 for its program.

State Program Profiles

Table 1 presents information about the legal and administrative structure of the 12 state programs, while Table 2 summarizes their program activities. In the following pages, we provide capsule profiles of the programs, discussed in order of their creation.

First Generation States

Kentucky. This program has been spurred by strong support by two governors: Governor Julian Carroll convened the first annual labor-management conference in 1976 and proposed and secured legislation creating an advisory council in 1978. In 1984, Governor Martha Layne Collins established a special unit in the Labor Cabinet to promote labor-management cooperation. This office has primarily emphasized the provision of technical and organizational development assistance to ALMCs and, more recently, to selected firms and nonprofit groups and their unions; however, it does not have a grant program. The advisory council has taken a broad role in state affairs, including helping to forge agreements on two contentious issues, unemployment insurance and worker's compensation.

West Virginia. Created at the initiative of the legislature in 1977, the Labor-Management Advisory Council struggled to secure effective support in the Department of Labor. In 1985, the program was given a stronger legislative mandate to work for economic growth and was moved into the Governor's Office of Community and Industrial Development, where its appropriations have increased substantially. At first, the Council staff worked directly with local unions and firms in mining and other industries; recently, they have focused on

TABLE 1

Legal and Administrative Structure of State Labor-Management Cooperation Programs

State	Legis-lation	Execu-tive Order	Administering Unit and Date of Founding	Annual Budget°
Illinois	1985		Office of Industrial Training and Labor-Management Cooperation, Department of Commerce and Community Affairs (1985)	1989-90: $297,300 + staff and administrative costs
Indiana			Indiana Labor & Management Council, Inc. (independent state-financed non-profit) (1982)	1989-90: $500,000
Iowa	1987		Labor-Management Cooperation Program, Department of Economic Development (1987)	1989-90: $100,000 + staff and administrative costs
Kentucky	1978	1984	Office of Labor-Management Relations, Kentucky Labor Cabinet (1984)	1989-90: $180,100
Michigan	1987		Labor-Management Partnership Project, Departments of Commerce and Labor (1987)	1989-90: $500,000 + $156,000 grant program for ALMCs
Minnesota	1985		Office of Cooperative Programs, Bureau of Mediation Services (1987)	1989-90: $187,500 + staff and administration
New York			Office of Labor-Management Affairs, Department of Labor (1988)	1989-90: $350,000
			Statewide Labor-Management Committee Program (1989)	1989-90: $50,000
		1986	Industrial Cooperation Council (1986)	1989-90: $998,400
Ohio	1985	1985	Office of Labor-Management Cooperation, Department of Development (1984)	1989-90: $2,000,000
Pennsylvania	1978		MILRITE Council (independent state agency) (1978)	1988-89: $228,000 + $825,000 grant program for ALMCs
			Office of Labor-Management Cooperation, Department of Labor and Industry (1988)	1989-90: $320,000
Tennessee			Tennessee Labor-Management Center, University of Tennessee (1980)	1989-90: $300,000

TABLE 1—(*Continued*)
Legal and Administrative Structure of State Labor-Management Cooperation Programs

State	Legis-lation	Execu-tive Order	Administering Unit and Date of Founding	Annual Budget°
West Virginia	1977		West Virginia Labor-Management Council, Governor's Office of Community and Industrial Development (1977)	1989-90: $250,000
Wisconsin	1987		Wisconsin Labor-Management Council, Department of Industry, Labor and Human Relations (1987)	1989-90: $80,000

° Fiscal year beginning . . .

establishing ALMCs and involving higher education institutions in their initiatives. Although the Council does not now finance ALMCs, the Governor has recently provided funding for one ALMC from his discretionary accounts and there are discussions about establishing a grant program.

Pennsylvania. The state has two distinct labor-management cooperation entities. In 1978, at the urging of the state AFL-CIO and Chamber of Business and Industry, the legislature created the MILRITE Council as an independent forum to discuss and make recommendations on key economic issues facing the state. The Council's mission was expanded in 1984 when several ALMCs successfully lobbied the legislature to establish the nation's first state ALMC grant program.

Pennsylvania's second initiative operates from the Department of Labor and Industry. Established by Governor Robert Casey's administration in 1987, the Office of Labor-Management Relations encourages cooperation by unions and firms through education and research. The Office provides grants to regional, industry-based committees. The Department also actively promotes cooperation in the state's more than 500 public school systems and in state government itself.

Tennessee. In 1980 the University of Tennessee's labor education program explicitly embraced a cooperative focus, changing its name to the Center for Labor-Management Relations. The Center trains union stewards and first-line supervisors, encourages union leaders to be more receptive to cooperative endeavors, and has recently begun working with communities to start ALMCs.

TABLE 2

Elements of State Programs to Promote Labor-Management Cooperation

State	State Labor-Management Advisory Body	Statewide Labor-Management Conference	Thrust of Technical Assistance	Grants to Area, Industry or In-Plant Committees	Research	Number of Area and/or Industry Committees in State*
Illinois	Illinois Labor-Management Cooperation Committee (1986)	biennial since 1987	to area, industry committees	1989: $297,300	yes	20
Indiana	Indiana Labor & Management Council (1982)	1984, 1985	to unions, companies	none	yes	6
Iowa	State Labor-Management Cooperation Council (1987)	1986, 1988, 1989	to area, industry, in-plant committees	1989: $100,000	no	13
Kentucky	Kentucky Labor-Management Advisory Council (1978)	annual since 1976	to area, industry, in-plant committees	none	no	12
Michigan	Governor's Labor-Management Advisory Council (1987)	annual since 1986	to unions, companies	1989: $156,000**	yes	7
Minnesota	State Labor-Management Council (1987)	1988	to area, industry, public school, county, municipal committees	1989: $187,500	no	5
New York - OLMA		1988	to area, in-plant committees	1989: $50,000	yes	5
- SLMCP	Statewide Labor-Management Committee Program (1989)				no	

TABLE 2—(*Continued*)

Elements of State Programs to Promote Labor-Management Cooperation

State	State Labor-Management Advisory Body	Statewide Labor-Management Conference	Thrust of Technical Assistance	Grants to Area, Industry or In-Plant Committees	Research	Number of Area and/or Industry Committees in State*
New York—(*Continued*)						
- ICC	Industrial Cooperation Council (1986)				yes	
Ohio	Tripartite Committee for Labor/Management Cooperation (1985)	1984, 1986, planned for 1990	to regional centers, area committees	1989: $1.8 million	yes	26 ALMCs 8 centers
Pennsylvania - MILRITE	MILRITE Council (1978)		to area committees	1989: $825,000	yes	18
- OLMC	Economic Development Partnership Labor/Management Working Committee	scheduled for 1990	through OLMC/DLI to state agencies, school systems	1989: $75,000	yes	
Tennessee	none	annual since 1986	to unions, companies Recently, to area committees	none	no	1
West Virginia	West Virginia Labor-Management Council (1977)	periodic since 1984	to area committees, unions, companies	none	yes	4
Wisconsin	Wisconsin Labor-Management Council (1987)	1987, 1989	to area, industry committees	1989: $25,000	yes	8

* These ALMCs may or may not be state-supported. We include them as a measure of the level of community-based labor-management cooperative activity.

** In Michigan, the ALMC grant program is not directly administered by the Partnership Project, but by the Department of Labor, which co-sponsors the Partnership Project.

Second Generation Programs

Indiana. The Indiana Labor-Management Council was founded in 1982 at the behest of labor and business leaders concerned about the effects of a negative labor-management relations image on the state business climate. The Council is a state-supported, not-for-profit corporation that provides direct technical assistance and training to unions and firms which seek to redesign work systems and implement in-plant, labor-management cooperation techniques. The Council provides some technical assistance to ALMCs, but this is not a major focus of its activities.

Ohio. Established in 1984 to implement Governor Richard Celeste's campaign promise and key planks of his administration's economic development strategy, Ohio's program has financed eight regional centers for the Advancement of Labor-Management Cooperation, primarily university-based, to provide technical and organizational development assistance to ALMCs and in-plant committees. Ohio also provides grants directly to ALMCs. In addition, it supports another center to provide technical assistance for firms and unions interested in employee stock ownership plans. This program is the nation's most extensive, with an annual budget of $2 million.

Illinois. This program was initiated in 1985 as part of the state's overall economic development activity. It provides technical and organizational development assistance as well as grants to ALMCs and industry committees. In the past several years, the labor-management program has suffered from budget cuts in the state's tight fiscal environment. In 1989, however, its manager was given responsibility for a large-scale industrial training program and intends to extend its scope to support cooperative programs at the firm level.

Minnesota. As a result of a statewide symposium of business and labor leaders, the state established a grant program for two existing ALMCs in 1985. The legislature substantially expanded this program in 1987 and created an office and advisory council in the Bureau of Mediation Services. The Office of Cooperative Programs works to establish and support area and industry committees and has targeted local public school districts and governments.

New York. Three distinct initiatives promote private sector labor-management cooperation. In 1986, Governor Mario Cuomo established the Industrial Cooperation Council to bring labor, business, and government together in assessing key economic issues. In 1988, the Department of Labor established an Office of Labor-Management Affairs, which has conducted surveys to design an information, referral, and technical assistance program for labor and businesses. Recently, the Statewide Labor-Management Committee Program, chaired by the Lieutenant Governor, has initiated grants to ALMCs and in-plant committees. Separately, the state promotes public sector labor-management cooperation for its own employees and for local governments.

Iowa. Established in 1987 with state lottery funds, the program provides grants to ALMCs, industry, and in-plant committees; offers technical and organizational development assistance; and has held three statewide conferences. Originally, this program shared staff with the state's job training division, but it now has a full-time director and will have a total budget of $200,000 in 1990-91.

Michigan. Designed as part of the state's economic development strategy, the Labor-Management Partnership Project was created in 1987 after several years of planning. It focuses on work site technical assistance provided under contract by universities, and it has an applied research program. The state separately finances an ALMC grant program, which it took over in the mid-1980s when the private Michigan Quality of Work Life Council disbanded.

Wisconsin. Established in 1987 as part of the state's economic development strategy, the Wisconsin program offers small grants to ALMCs and industry committees and also provides information and referral services. It is gradually taking a more active facilitative role in promoting area and industry labor-management cooperation activities.

Other State Activities

In addition to these 12 states, several others have undertaken labor-management cooperation activities but have not yet established ongoing programs. Alabama has held a statewide conference since 1984, and in the last year Oregon and Wyoming have also organized statewide conferences.

California's Public Employee Relations Board has launched a project to promote labor-management cooperation in public sector collective bargaining, especially in state government, school districts, and higher education.

Texas Governor Mark White established a tripartite advisory council, the Governor's Task Force on Labor-Management Relations in late 1984, but it did not survive the transition to the Clements administration in 1987.

A few other states have taken very preliminary steps. Recently, Idaho created a small working group of construction industry and labor leaders to consider, among other things, holding a state conference. In Washington State and Massachusetts, individual state legislators have sought support for a state program but have not succeeded in enacting legislation. Montana is considering the establishment of a grant program for ALMCs.

Conclusion

As severe economic pressures in the late 1970s and early 1980s decimated whole sectors of American industry and threatened to cause permanent decline, many state governments energetically sought ways to spur recovery. One of the more novel elements of their emergent economic development strategies was to promote labor-management cooperation. These programs built upon growing sentiment among many labor, business, and government leaders that across-the-board adversarial relationships in industrial relations were a serious barrier to economic progress. In a dozen states, they crafted programs to encourage collaborative efforts to bring new companies to their areas, retain the firms already there, and improve the competitiveness of American labor and business in the international economy. This paper has sought to describe the range of activities that they have initiated.

Although the US Department of Labor has offered advice and encouragement, these programs are fundamentally *state* initiatives—each developing in response to locally perceived needs. Because they are very young programs, still searching for and experimenting with policy tools appropriate for their objectives, it is too soon to make definitive judgments about their impact and effectiveness. Yet preliminary assessments of their strategies and performance can usefully be made. As noted above, the current authors will soon publish a detailed analysis of efforts in five states—Illinois, Kentucky, Michigan, Ohio, and Pennsylvania. Certainly, in coming years, those interested in labor-management cooperation should carefully track the progress, disappointments, and accomplishments of the state initiatives.

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Endnotes

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This paper is based upon personal and telephone interviews with program managers and other knowledgeable observers in each state discussed, as well as on documentary materials. A full list of sources, not presented here because of space limits, is available from the authors or in their forthcoming monograph, cited below.

[2] For earlier brief overviews of state programs, see John R. Stepp and John L. Bonner, "States Tie Economic Development to Improved Labor Relations Climates," *Journal of State Government*, Vol. 60 (January-February 1987), pp. 40-43; and Joel Cutcher-Gershenfeld, "Constructing a New Social Contract: The Role of Community and State-Level Initiatives in the Transformation of U.S. Industrial Relations," (unpublished paper presented at a conference on New Trends in Industrial Relations in the USA and Italy, October 12-13, 1989, in Rome, Italy), pp. 18-23. Data about these programs have also been summarized in tabular form by Miriam Schenkenberger and Mark Larson, in *Work in Progress: The Newsletter of the Consortium of State Labor-Management Initiatives*, Vol. 2 (Spring 1989), p. 3.

[3] See *Promoting Labor-Management Cooperation: An Assessment of State Initiatives* (Taubman Center for State and Local Government, Kennedy School of Government, Harvard University, forthcoming).

DISCUSSION

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Economic development is a critical issue for the 1990s, representing the nexus between micro-level issues such as labor-management relations, and macro-level issues, such as economic growth. The stakes of a state having a sound economic development policy are no less than economic survival. Notwithstanding this, there are many actors involved in the formulation of economic development policy, many of whom are not talking to one another. This panel is a beginning.

These papers provide us with food for thought for at least two different audiences—practitioners and academics. Practitioners can be divided into the following four groups: (1) labor and management pairs who are trying to decide whether to engage in a cooperative experiment in order to retain jobs or the present location of the firm; (2) state actors—such as economic development experts in state government; (3) "true believers" who are already dedicated to labor-management cooperation; (4) anti-cooperatives or agnostics who do not yet believe in cooperation as a sure route to economic development. The questions for the practitioner group focus on the practical issues of how to begin initiatives, etc.

Questions for the academic group are: How do we best study this? How do we measure effectiveness? Our first task is descriptive, followed by a second task of theory-building. What is the theoretical linkage between labor-management cooperation and other indicators of success such as quality and productivity? What theoretical link is there between labor-management cooperation and economic development?

There are certain "givens" which defy rebuttal:

1. Assuming the parties can reach a consensus that economic development is a major goal they share and each party can put aside its respective narrow goals, then labor-management cooperation is a rational route to economic development. It saves jobs.

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2. The innovation of labor-management cooperation experiments which encourage economic development is spreading.

3. To change the results of a firm or a labor-management pair, there must be a change in culture.

4. There is a linkage between training and economic development. Labor's participation in the process, particularly in the training process, can enhance the success of programs.

5. The route which has been very successful is that of partnerships, for example, a university working with a firm or a union.

Some propositions are more speculative:

1. The Cleveland paper suggests that what is needed is not training for a specific task but training for a quality of adaptability. This is both intuitively appealing and testable.

2. What level of state intervention is optimal? The designs of state programs range from those with a large budget and a permanent staff, to partnerships, to a clearing house function only. A second issue is, Where do you locate it?—in the Commerce Department or Labor Department?

3. How do we best increase labor-management cooperation? Efforts to systematically look across efforts usually have not yielded any single formula or model for best doing this. Practitioners suggest that there is no one best model, but rather each cooperative experience and each economic development policy should be streamlined to each case or each state.

The Analytical Level

How does an innovation, which is essentially a creature of micro level, get started? Is it a crisis? Is it opportunity? or is it leadership? Secondly, how does it spread? A needs hypothesis which has been developed in other work (Hoyman and Ferman, 1990) is that industries which are either in decline or in a state of change are more likely to adopt labor-management joint training programs? This hypothesis could similarly be applied to the spread of labor-management cooperation aimed at economic development. Also, a regional hypothesis applied in other work on the diffusion of joint labor-management training programs can be applied here.

Methodology

Besides the important question of how it spreads, we need to know how to study it. The panel is in search of a methodology. The Gerhart paper illustrates this and is excellent in that it tries to look at quantitative and qualitative evidence. However, even though the practitioners and state-level persons are convinced of the value of labor-management cooperation, when we measure the effects of state-level efforts, we get positive but not significant results.

Why do we get a result that at least in statistical terms is not significant? First, we may have meaning where there is no statistical significance. The converse is true: We may have statistical significance without meaning.

Dependent Variable

For the state which has embarked upon an economic development program, a net gain or loss of jobs is the most important dependent variable. However, there are other variables to consider. Other dependent variables are labor-management climate, quality and productivity, and most important perhaps, the public's perception of the labor-management climate.

Data

Data are not yet available. The anecdotal data abound. However, the most ambitious test to apply is jobs or the addition of jobs. It assumes that the firm has already received news of the change, that the firm is making its decision to stay based on improved labor-management relations, and that the firm has had enough time to make that decision.

Long-term Process

We are using a short-term time frame to assess the effects of such efforts. Some programs were set up in 1986 and we are assessing the results in 1988 or 1989. We are taking our measurement before sites have even started the change. If training is necessary, and it usually is, the training program may not even be in place.

Not a Linear Relationship

Although we tend to fall back on popular statistical techniques, such as regression, I am not convinced that the process is necessarily linear.

Modelling

We may want to try to model this process using some micro-level variables, such as (1) the predisposition toward change at the micro level; (2) the rate of absorption of change which is different across employment settings; (3) the creations or not of the new culture along with the (4) macro-environmental factors against which this is occurring; (5) the perception of labor-management parties, perceptions often being more important than reality; and (6) use of multiple indicators of success such as jobs, moreover the calculus of jobs and other benefits vs. other costs to economic development.

Academics should focus on perfecting a suitable methodology and on doing critical studies. The naysayers or opponents of labor-management cooperation should look at the data. The proponents may want to look again at the data, rather than clinging to the ideology supporting cooperation. The economic development experts need to think long-term not short-term. If this were to happen, not only would we have different camps engaged in a dialogue, but we would be able to be more reflective about what has occurred to date in terms of economic development.

References

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V. THE ORGANIZING PROCESS: CONTEMPORARY CHALLENGES AND UNION RESPONSES

Union Membership Rules: What Do They Tell Us About Alternative Union Form in the Past, Present, and Future?

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What are the alternatives at hand for providing representation to those who are not organized in trade unions? And what would be the effect on union form of providing membership to the unorganized?

These questions are prompted by the AFL-CIO report (Committee on the Evolution of Work, 1985), which goes so far as to encourage the international unions to experiment with new union forms as a way of providing representation for employees not currently in unions. Specific groups the report targets are: (1) the nearly 30 million who once were in unions and no longer are, who left their unions but did so because they lost their jobs or moved to better job opportunities where there were collective bargaining agreements; (2) those employees who might never have had unions and still do not, but who might wish to have something outside of the workplace that would serve to represent their interests *qua* employees (e.g., legal counsel in an employment-at-will case); and (3) those who may not have permanent workplaces or permanent employers and are typically not covered by a collective

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bargaining agreement, such as individual contractors, freelance consultants, and temporary employees.

The proposed strategy for providing representation to these disparate groups of employees centers around associate membership and has been referred to as "associational unionism" (Heckscher, 1988). The AFL-CIO report suggests that associate membership be considered as an option by the international unions and at the level of the Confederation. Associate membership is viewed as perhaps the most radical element of the report because it changes the condition of membership from that which we shall refer to as "traditional unionism" and requires that a collective bargaining agreement cover employees in order that they be considered eligible for union membership.[1] Associate membership does not require employees to be covered by a collective bargaining agreement. The associate member joins a union because there are private goods that come with membership, but the benefits of being a member of a union are not achieved directly through the workplace.

We examined the constitutions of 25 international unions to see if there are deviations that allow for associate membership or alternative membership that is associate-like. The categories of membership status we looked at are: (1) associate membership, (2) membership directly to the international or to the local when the employee is not covered by a collective bargaining agreement, (3) continued union membership for those who have left employment that was covered by collective bargaining, and (4) membership for those who are self-employed, owners, or have temporary employment status in unionized settings.[2] We find that, in addition to the associate programs that postdate the AFL-CIO report, unions have allowed membership that, in several ways, differs from the traditional notion of active membership. These alternative membership rules predate the AFL-CIO report and are, at least on paper, comparable to the associational model.

Our examination of union membership rules is theoretically tied to Max Weber's distinction between open versus closed relationships, which are distinguished by the exclusivity of membership as determined by rules (Weber, 1978). Associate unionism represents a more open relationship. Viewed in this light, associate membership is not a revolutionary change, but it simply represents one more way in which unions become more open organizations (i.e., they have fewer entry restrictions).[3]

The impetus for our analysis is the notion that membership rules are a key to understanding union form. What separates an organization from its external environment (i.e., makes an organization an organization) are membership rules that serve as boundaries as to who can, and who can not, be in the organization. Accordingly, we believe that rules used to determine who can be a union member are fundamental to understanding union form. We conclude by providing an analysis of possible union form given movement towards more open membership.

What Do Union Constitutions Have To Say About Membership?

We examined the most recent constitutions of 25 international unions or associations that engage in collective bargaining: American Nurses Association, American Federation of State, County and Municipal Employees (AFSCME), American Federation of Teachers (AFT), Allied Industrial Workers (AIW), Amalgamated Clothing and Textile Workers Union (ACTWU), Airline Pilots Association, Bricklayers Union, Carpenters, Communication Workers of America, Hotel Employees and Restaurant Employees (HERE), International Association of Machinists (IAM), International Brotherhood of Electrical Workers (IBEW), International Longshoremans Association, the Laborers (LIUNA) and its Mailhandlers' division, Maintenance of Way Employees, National Association of Letter Carriers (NALC), National Educational Association (NEA), Office and Professional Employees International Union (OPEIU), Plumbers, Service Employees International Union (SEIU), Teamsters, United Auto Workers (UAW), United Food and Commercial Workers, United Mine Workers (UMW), United Steel Workers (USW).[4]

Our sample of unions is not strictly random. We included unions that we expected would have, and would not have, alternative membership rules. We selected three unions that had recently drafted provisions in their constitutions calling for associate union status and used these as a basis of comparison to the associate-like provisions in the other constitutions. We also selected the Mailhandlers union because of their long-standing associate program. We also made sure to include craft unions because they operate as closed organizations and are thus less likely to have the alternative membership rules.

Our strategy for analyzing the constitutions was as follows. We examined the section on membership rules and related sections in the most recent international union constitution. We did so seeking membership rules that deviated from the definition of an active member as defined by the traditional model. We did not consider honorific membership and other nominal categories of membership as substantive deviations from the traditional model. When we found deviations, we backtracked to constitutions that predated 1985 and the AFL-CIO report to determine if the membership rule had been in existence prior to the report or not. We highlight the variation and form in alternative membership rules in this paper.

Do unions have associate member programs? In our sample three cases readily come to mind. The ACTWU in 1987 and the USW in 1986 drafted into their constitutions provisions calling for associate membership. The constitutions make use of the same language and state that. . . "those eligible for membership shall include former and potential members." (ACTWU, p. 40; USW, p. 94). Whereas the USW constitution makes no mention of retirees being excluded, the ACTWU expressly restricts their membership as associates. Associate membership does not confer full rights of active or traditional union membership in these two cases. Associate members are not entitled to vote or run for office in the traditional part of the union, only in the associate component. In 1986, OPEI also introduced associate membership status, stating that: "The Executive Board shall be empowered as they so feel appropriate to establish an associate membership category. . . ." (p. 3). This latter provision does not exclude, *ex ante*, any group from becoming associate members. Restrictions on membership rights are not mentioned.

Associate unionism existed before the ACTWU, USW, and OPEIU heeded the recommendations of the AFL-CIO. Associate membership in the Mailhandlers' division of the LIUNA predates the AFL-CIO report by some time. For example, the 1970 constitution reads:

> "Individuals employed in any branch, department, or agency of the federal government, including the Post Office Department, who do not otherwise qualify for membership in this organization but who desire to participate in the Mail Handlers' Health Benefit Plan may be admitted to associate membership in this organization. . . . Membership by a federal employee in any other affiliate of LIUNA shall constitute associate membership in this organization for the purpose of participation in the . . . Benefit Plan." (p. 2, 3).

In this case, associate membership is determined by employment in the federal government; any member of the Laborers union is also automatically given associate membership. The Mailhandlers' constitution limits the rights of associate members. They are not entitled to vote or take active membership in the local union.

Associate membership can be much more limited and targeted than in the above cases. The AFT (1984) has an associate program for prospective teachers being trained at a college or university. Other associate programs do not carry the same meaning that we have attached to associate membership in this paper; in those cases, associate membership simply reflects a nominal or honorific category of membership. On the other hand, as we shall discuss, unions have membership rules, not necessarily referred to in the context of associate membership, that have properties of associate unionism which serve as alternatives to the traditional model.

In this regard, membership rules exist that allow individuals to join a union even if there is no local in that area. While the 1986 UAW constitution states that membership is confined to workplaces where there is a local union, that same (and earlier, e.g., 1980) constitution provides that: ". . . applicants working for unorganized employers, or in those units not yet under the jurisdiction of a UAW Local Union, may become members of the International Union directly. . . ." (p. 7). The IAM has an identical provision. The HERE union has a similar clause in its constitution: "Persons employed at an occupation within the jurisdiction of this International Union, but in a locality where no Local Union exists, may upon application become members-at-large" (p. 46). The interesting point about this latter provision is that the constitution requires that: "Such members must establish a local union when so directed. . . ." (p. 46). Finally, AFSCME too has a provision in its constitution for membership-at-large.

In other cases where the individual has no local union, the individual becomes a member of the closest local. The IBEW 1986 constitution states that: "Any worker or employee coming under the IBEW's jurisdiction and residing where there is no L.U. [local union] . . . may become a member . . . of the L.U. having jurisdiction" (p. 78). The constitution also allows for direct membership to the international union. The AFT (1984) allows individuals who are employed as teachers at a college or university that does not have a local union to become a member of the local in that vicinity. Finally, the AIW 1987 constitution states that: "Persons working in localities in which there are not enough workers to organize a local union or in which an organized Local Union has been suspended, expelled or has withdrawn, may apply for membership in the nearest Local Union in the vicinity" (p. 10).

Unions also have rules for dealing specifically with those employees who have left their bargaining units either because they have found another job or have been laid off or are otherwise unemployed. The NALC 1986 constitution provides that: "present members who have left the postal service, or have been temporarily promoted to supervisory status, may retain their membership but shall be members only for purpose of membership in the NALC Insurance Plan and/or the NALC Health Benefit Plan" (p. 6). These members do not have voice or vote in the union. The Brotherhood of Maintenance of Way Employees (1982) also has a provision allowing former members who leave the railroads or go to another department not under the jurisdiction of the Brotherhood to continue their membership. These former members are not allowed to participate in union business. Similarly, the Mailhandlers (1986) allow for ". . . Members who have separated themselves from employment within the jurisdiction of this organization shall have the right to membership. . . ." (p. 5). Again, such members' rights are limited; they are not entitled to run for, or hold, office in the union. The UMW (1983) allows workers who are unemployed by no fault of their own or laid off to maintain membership, but once a member becomes regularly employed outside the union's jurisdiction, the employee must forfeit his or her membership. Other industrial unions simply allow the laid off or unemployed worker to maintain union status for some extended period of time after the individual has been separated from his or her job and the local union that has jurisdiction over it. The AIW, for example, allows locals through their bylaws to extend membership to 12 months after separation.

Finally, there is a class of people who either do not have permanent status with an employer, are self-employed, or are owners of some sort. What options are currently available to them? The 1986 SEIU constitution (and earlier ones such as that for 1959) has a clause indicating that: "Self-employed individuals doing work within the jurisdiction may be eligible for membership in local unions" (p. 7). In this option, a local could be fully composed of self-employed persons. If that were the case, the limitation on rights so often found for less than active members would not hold. The NEA has had for some time a clause to deal with the temporaries in their industry, substitute teachers. One option for them is to become substitute members. They then receive Educators Employment liability coverage and other benefits and services authorized by the Board of Directors. The Teamsters (1986) also has a provision in its Constitution for dealing with the self-employed who may also be owners: "Persons who own, lease or operate a team or vehicle . . . may be eligible for membership. . . ." (p. 50).

What Do Alternative Membership Rules Say About Union Form?

With just 25 constitutions, we have demonstrated several alternative forms of membership in unions. Three unions in our sample had associate programs based on the recommendations of the AFL-CIO report. In addition, there were a number of associate-like options in which individuals could become union members but were not required to be covered by a collective bargaining agreement. While many of these plans appear vague because it is not clear what the individual gets by becoming a member, the same criticism can be made against the associate programs in the three unions. Moreover, for us the key to these alternatives to traditional membership is not what the individual gets from the programs but what they tell us about membership and the nature of the organization; Is the union more open or closed?

While we have only begun to see the development of associate unions prompted by the AFL-CIO report, our examination of the constitutions suggest that there exists already, at least on paper, significant variation and form in membership rules that vary from the traditional model. Three key questions are raised by these alternative membership rules: Why did they come about? Who made use of them? And, what are their effects on union form?

Answers to the first two questions are reserved until we have more historical information on these membership rules. We address the third. The traditional membership rules in unions restrict eligibility and thus make unions more closed organizations. Who is in the union and who is out is boldly demarcated. In such organizations, the goals of the organization are often isomorphic with the goals of the individuals. Such organizations are also more likely to be communalistic (Weber, 1978). Members are part of a community and their activities are difficult to separate from their goals.

Open organizations do not have as restrictive rules concerning membership; such organizations often want to get as many members to join as possible. Size fosters, for example, economies of scale (e.g., providing benefits at low cost) and political influence. Open organizations are thus much more susceptible to diversity or heterogeneity in membership. Such heterogeneity has implications for unions. We know, for example, that contract ratification is often more difficult when the union membership is more diverse and that internal politics become more of an issue. Weberian analysis suggests that heterogeneity places greater demands on the organization because the different groups want different services. Thus, as a union becomes more open we should expect to find more of its budget going to the staff functions that serve its varying clientele of union members.

Unions have in some ways safeguarded themselves from the issue of membership diversity and its attendant consequences by creating different classes of membership. We observed that traditional active members had, *inter alia*, rights to voice at local and international meetings, the right to vote at union meetings, the right to vote for union officials, the right to hold elective or appointive office, and the right to vote in union ratification elections. Associate and other alternative membership resulted in significant diminution of these rights. The issue then becomes why would anyone want to join such unions? Weberian analysis suggests that open organizations are more apt to be associative organizations—organizational members perform activities that are instrumental to the attainment of goals and receive different instrumental benefits. In this vein, Jarley and Fiorito (1990) find that associate membership in unions has been largely predicated on consumerism.

The above arguments suggest that, assuming we see a continued trend toward unions as more open organizations, we shall see the form of unions change toward service-oriented organizations with large staff functions, who act more like corporate entities. Such unions might be political versus apolitical or militant versus cooperative or some combinations of the above; constituent demands, reflecting membership rules and the consequent membership composition, will further shape these alternative union forms.

Acknowledgments

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Endnotes

[1] There are two versions of the traditional model. In its industrial union form, employees are active members of the union if there is a local union at the workplace. In its craft version, to be considered an active member, an individual must join the union as a condition of employment and work at sites that are covered by a collective bargaining agreement.

[2] While membership rules regarding retirees of unions and supervisory personnel could fall under the title of this paper, space limitations necessitated their omission.

[3] Unions can become more open organizations through changes in the membership rules or jurisdictional rules. Recent organizing drives by the UAW and USW in new occupations and industries do not constitute changes in membership rules. They relate to jurisdictional rules. Membership rules do not have to change for the UAW to organize workers in, for example, state agencies. The jurisdiction of the union has been enlarged. We do not consider jurisdictional rules in this paper.

[4] We abbreviate, when possible, names of unions that are referred to later.

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*Space limitations preclude listing all of the union constitutions.

Union Activism: Determinants to Active Union Support in a Representation Election

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It is important to understand the process of union formation. Public policy makers, managers, and union officials all have an interest in understanding the phenomenon of union organizing. Because of the decline in union membership, knowing why employees form unions is a particularly important concern of the labor movement.

Considerable research attention has been devoted to the issue of union formation in recent years. Some research has examined factors that influence macrolevel outcomes such as union victory rates across elections (e.g., Heneman and Sandver, 1989). Other research has focused on the outcome of a single representation election as the unit of analysis (e.g., Maranto and Fiorito, 1987). More commonly, numerous studies have investigated individual and contextual causal determinants of the individual's decision to vote for union certification.

The results of individual-level research on union formation indicate a number of variables are consistently related to support for union formation. The relationship between job satisfaction and union voting has been the most frequently examined issue in individual-level studies (Premack, 1984). The findings of the many studies on the satisfaction variables indicate a consistently negative relationship between a prounion decision by an individual and level of job satisfaction (Fiorito, Gallagher, and Greer, 1986; Hills, 1985). Therefore, it appears that the most prevalent view emanating from individual-level research on union formation is that people join unions because they are dissatisfied with the conditions of their employment (Zalesny, 1985).

Several studies have found general attitudes toward unions to be a significant correlate with voting in representation elections (e.g., Schriesheim, 1978; Getman, Goldberg, and Herman, 1976). In addition to the relationship between general attitudes toward unions and

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individual voting, some research findings have shown a relationship between voting for union formation and various measures of union image (Youngblood et al., 1984) and attitudes toward specific local unions (Schriesheim, 1978).

The perception that the union would be an effective mechanism to redress work problems has received considerable research attention. Some have argued that perceived union instrumentality is one of the predictors for which results are unequivocal (Heneman and Sandver, 1983). Emphasis on the importance of perceived union instrumentality has come from some researchers who have postulated that job dissatisfaction triggers a search for alternate means of alleviating job problems, but it does not guarantee dissatisfied employees will vote for union formation unless the union is viewed as instrumental for producing desired changes (DeCotiis and LeLouran, 1981).

The extensive body of research on individual-level determinants also includes the investigation of the relationship between union support and an array of demographic variables such as age, race, sex, gender, education, region, and marital status. The findings of much of the research on demographic variables have, however, provided mixed and conflicting results.

The literature on determinants of individual support for unionization has identified a number of correlates to voting behavior in union representation elections. However, it appears that three variables emerge from the literature as consistent determinants of individual support of unionization: dissatisfaction, attitudes toward unions, and perceived union instrumentality.

Union Activism

As indicated, the prevalent outcome variable of interest in the individual-level research has been self-reported voting behavior or intent of voting behavior in representation elections. Voting for union representation is, of course, the principal means of union certification in National Labor Relations Board certification elections. Given its importance, it is not surprising that previous research has focused on this outcome variable. The research presented here attempts to expand on the previous research by investigating determinants of a different individual-level outcome—union activism in the union certification campaign. Examples of union activism include such activities as asking fellow workers to sign union authorization cards, urging employees to vote for union certification, and attending union campaign strategy meetings.

Being an activist on behalf of the unionization effort is different from simply voting for union certification in the secret ballot election. First, actively working for unionization requires time and effort. This probably means the employee is highly motivated to the union cause. In addition, being an activist in a contested union campaign requires a public display of opposition to management. Thus, active and visible support for the union may increase the likelihood of employer reprisal.

Gaining the support of activists within the potential unit may be one of the most important challenges facing the union organizer. Unlike management, union organizers do not have unimpeded access to employees within the voting unit. As a result, successful union formation may depend to a large degree on the recruitment of employees who possess the willingness and leadership ability to persuade fellow employees to support the organizing effort.

Emotional Affect

Previous research has viewed the process of individual voting behavior as a highly rational process. As a result, the empirical investigations have been limited to the testing of variables such as union instrumentality perceptions. While the research reported here also includes variables that imply the decision to vote for union formation is a calculative process, this study also focuses on the role of emotional affect in the form of anger directed against the employer as a factor that can give impetus to an individual's readiness to support union formation.

State anger is defined as an emotional state marked by subjective feelings that vary in intensity from mild annoyance or irritation to intense fury and rage (Speilberger, 1988). The intensity of state anger varies as a function of perceived injustice and frustration resulting from barriers to goal-directed behavior. In other words, such occurrences as the perception of injustice which incites feelings of anger, emotional affect in the form of anger resulting from deprivation or threats, and anger arising from the failure of management to respond to appeals by workers to redress grievances could provide an impetus for active support for union formation. The emphasis on including emotional affect as a possible correlate to union support is perhaps relevant to the unique outcome variable examined in this study. In other words, anger may better predict union activism than voting behavior. This statement is based on the belief that union activism requires a higher level of motivation and involves a public display of allegiance to the union.

Model and Variables

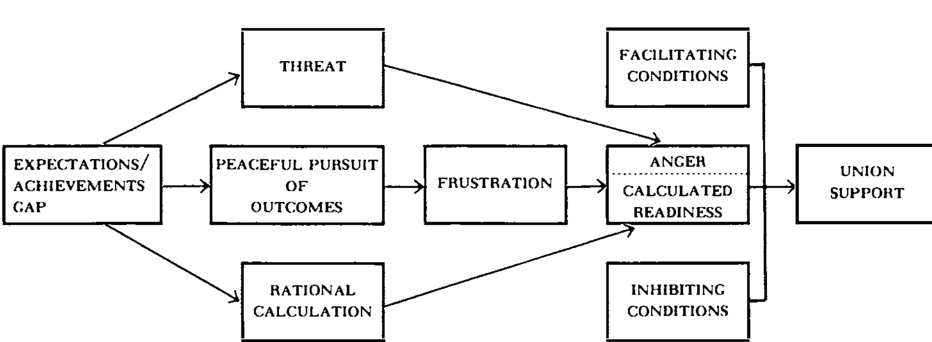
Some reviewers of the union organizing literature have indicated that there is a need for more empirical work on union formation based on theory that is used to predict relationships from a more systematic base (Fiorito, Gallagher, and Greer, 1986). This study utilizes a model adapted from a general theory of collective action developed by Wheeler (1985). Although not a test of the Wheeler model, the issues examined in this study emanate from the general theoretical perspective outlined in Wheeler's Theory of Industrial Conflict.

As shown in the model (Fig. 1), the employee first experiences a state of deprivation as to desired employment outcomes, as reflected by an expectations/achievements gap. The employee then moves to become ready to actively support the union through one of three paths: threat, frustration, or rational calculation. If the expectations/achievements gap is caused by a threat, the worker may move directly to a state of anger. As in the Wheeler model, it is predicted in this model that most commonly the occurrence of an expectations/achievements gap will lead to a peaceful pursuit of improved conditions. If action by the employer prevents these achievements, frustration and anger may result. The rational calculation path, on the other hand, involves the employee simply making a calculation that the benefits outweigh the costs, and therefore, the employee becomes ready to support the union. This path leads to a calculated readiness to support the union as opposed to an emotional state of anger.

Even given the existence of a state of anger or calculated readiness, the individual may not choose to support union formation. The model illustrates that inhibiting conditions may function to prevent the

FIGURE I

Adaption of the Wheeler Model



individual from actively supporting the union certification effort. These inhibiting conditions are a belief that it is wrong as a matter of principle to support union formation and anticipating punishment from the employer. In addition, the model includes facilitating conditions to supporting union formation. These facilitating conditions are a sense of solidarity with other workers and perceived union instrumentality.

A series of hypotheses derived from the model were tested. These hypotheses predicted significant relationships between measures of the following independent variables and active support for union certification:

(1) Pay: perceived deprivation as to pay;

(2) Respect: perceived deprivation as to level of respect or dignity received from the employer;

(3) Security: perceived deprivation as to the level of job security received;

(4) Anger: state of anger directed against the employer;

(5) Instrumentality: perception that the union would be successful in improving problems at work;

(6) Fear: fear of punishment from the employer for supporting union formation;

(7) Attitudes: absence of belief that it is wrong as a matter of principle to support union formation;

(8) Solidarity: perceptions of solidarity with fellow workers.

Results

In order to test the relationship of these variables to union support, data were gathered from four union representation campaigns. The cases varied in terms of sample size and election outcome. Samples of 411, 406, 181, and 114 were recorded. There were three unions involved among the four cases studied. In no election was there more than one union involved in the organizing effort. Data were collected via a telephone survey of employees. A structured telephone survey questionnaire was used. The questionnaire was developed to reflect specific single-item measurement of each variable. A single-item approach was used as opposed to a multi-item questionnaire because of the practical limitations of the telephone survey method of data gathering. Instrument reliability was evaluated by comparing the self-reported responses of individuals concerning their support for union formation to the perceptions of union organizers as to the respondent's level of support. Hypotheses were tested by conducting regression analyses of the independent variables on the individual respondent's self-report of the level of participation in campaign activities. The data from each certification campaign were analyzed within each specific case rather than aggregating the data across cases. This approach permitted replication among the cases in a manner analogous to multiple studies or experiments.

Due to the space limitations, detailed multivariate statistical results are not provided. Table 1, however, provides an overall summary of the significant variables across the four cases.

TABLE 1

Summary of Significant Variables Reported in the Regression Analyses of Activism (Cases A, B, C and D)

Case	Pay	Resp.	Sec.	Anger	Instrument.	Fear	Attitudes	Solid.	R2
A		°°°		°°°	°°°	°°°	°°°	°°	.60
B				°°°	°°°			°°	.37
C					°°°				.40
D			°°°		°°°			°	.39

°°° significant at the .01 level
°° significant at the .05 level
° significant at the .10 level

Resp. ='s respect deprivation, Sec. ='s security deprivation, Instrument ='s union instrumentality, Solid. ='s solidarity. Pay was analyzed but was not significant.

Perceived union instrumentality is significant in each case. Thus, the most conspicuous result from the regression analyses is the consistent finding that the perception the union would be instrumental in improving problems at work is significantly related to an individual choosing to actively campaign on behalf of the union in the certification campaign.

After consideration of the more calculative oriented variable union instrumentality, the other variables drawn from the model provide some significant, yet less consistent, results. Among the individual deprivation variables, respect deprivation was significant in Case A and security deprivation was significantly related to activism in Case D.

The anger measure was significant in Cases A and B. Thus, it appears that the emotive variable of anger along with the more utilitarian-oriented variable of union instrumentality played a significant role in an individual's decision to actively support the union in these campaigns, whereas activism behavior appears to have been a function of more coolly calculative conditions in Cases C and D.

In terms of other facilitating and inhibiting conditions—fear of employer reprisal, attitudes toward unions, and worker solidarity—each of these variables is significant in at least one case, with solidarity being the most frequently observed statistically significant independent variable. Fear of employer reprisal, however, is in the opposite direction predicted in the one case that this variable was significantly related to union activism. This indicates that individuals who believed the employer would punish them for supporting the union nevertheless campaigned on behalf of the unionization effort.

Summary

The purpose of this study was to expand on the previous empirical work on individual-level determinants to union formation by testing a set of hypotheses drawn from a model of union activism. The study differed from previous research in that a measure of union activism instead of voting behavior in a representation election was evaluated as the outcome of interest. In addition, this study involved the testing of hypotheses that predicted the occurrence of active individual support for the union in the certification campaign is a function of both the individual's logical assessment that union formation would be instrumental to improving work-related outcomes and feelings of anger directed against the employer. While some limited support was found for this approach, future research should provide more assessment of the role of emotional affect as a determinant to union formation.

This study found some evidence that fear of employer reprisal did not suppress union activity as postulated. Deshpande and Fiorito (1989) and Rosse, Keaveney, and Fossum (1987) have reported similar results. Perhaps heavy-handed employer tactics may backfire, or it may be that prounion employees are more likely to anticipate hostile employer responses (Deshpande and Fiorito, 1989). It appears that additional research on the impact of fear as an inhibiting force is warranted.

This study was an initial attempt to investigate union activism in a certification campaign. The decline in union membership in recent years reveals the need for organized labor to develop new tactics in union organizing. Further investigation of facets of the union campaign such as the role of the employee who volunteers to actively campaign for union formation may be of some help in the development of new campaign tactics.

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The Organising Process: Contemporary Challenges and Union Responses in Britain

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Prior to the 1980s, the subject area of union recruitment and organising was one that was rarely systematically discussed, debated, and researched by unions and industrial relations academics in Britain. In the decade of the '80s, however, this position has changed dramatically, with union recruitment/organising now being very much one of the "hot" subjects in industrial relations practitioner and researcher circles. The essential purpose of this paper is to identify the basic *nature* of, and major *reasons* for, this recent change in attitudes and activity concerning union organising/recruitment. However, before presenting our discussion under these two subheadings, we briefly outline the traditional nature of, and position toward, union organising/recruitment in Britain.

The Traditional Position of Union Organising

In the years prior to the decade of the '80s, one can reasonably characterise the role and process of recruitment/organising within union circles in Britain as being nonspecialist, reactive, decentralised, and low profile (priority) in nature. This characterisation follows from the following facts: relatively few unions employed specialist recruitment officers; the full-time officers of most unions spent only a limited amount of time on recruitment activities;[1] union training courses were overwhelmingly concerned with developing negotiating, as opposed to recruitment, skills; the alleged existence of a centralised recruitment strategy in an individual union rarely involved anything

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more than a tendency to concentrate on larger-sized organisations, and the norm in recruitment tactics was for unions to react or respond to potential or actual members who first approached them about organising possibilities at their particular place of employment.

This view of the organising/recruitment process by unions should be seen in the light of the following facts and considerations. First, statutory union recognition or representation procedures have only ever operated in Britain in the years 1971-74 and 1976-80; traditionally, British unions have attempted to recruit members and obtain recognition for collective bargaining purposes by essentially voluntary means, with some limited use having been made of third party conciliation (mediation) facilities. (This fact should not obscure the all-important, historical role of the Government in successfully "pressuring" employers' associations to recognise unions in the two wartime periods.) Secondly, even the high union growth years of the 1970s (when overall union density increased from some 45 to 55 percent of the workforce) were not particularly associated with new, innovatory union recruitment strategies and tactics in the relatively underorganised areas of the labour market; these years essentially involved the growth of union security and membership dues check-off arrangements and the consolidation of membership in the already relatively highly organised public sector and manufacturing industries sector. (The result was that in the '70s the proportion of the workforce covered by collective bargaining arrangements showed nothing like the growth that occurred in union membership.) Thirdly, the conventional academic wisdom prior to the 1980s (Bain, 1970 and 1976) was that an overall growth in union membership was highly contingent upon a favourable, larger economic and political environment, with the particular recruitment strategies and tactics of individual unions (such as they were) often not being particularly successful and certainly contributing little to overall membership growth. These points will all be returned to later in the paper.

The Nature of the Change in the 1980s

There are three particular aspects or features of change that we wish to especially highlight here. First, the unions have become particularly willing to be involved in discussions and to work with industrial relations academics in recent years on a variety of topics and issues concerning membership recruitment and organising. Numerous examples could be cited here, but the mention of one recent exercise at the University of Glasgow should help convey some of the flavour of these sorts of developments. One of the TUC-affiliated unions which recruits nurses in the National Health Service has historically had its nursing membership overwhelmingly concentrated in mental or psychiatric hospitals, but in the past year or so they have achieved some limited membership gains in general nursing hospitals (the traditional recruitment ground of a competing, non-TUC-affiliated union or bargaining organisation). As the general nursing area is growing relative to the psychiatric one, the TUC-affiliated union has asked us to investigate the particular recruitment issues and tactics which have contributed to this recent "breakthrough" in the former area, and to identify any lessons which can help them to maintain and build on these gains in the future.

Secondly, the unions have initiated some important internal studies of their own which are an acknowledgement (at least implicitly) of the fact that the old ways of organising will not suffice in the future. For example, the TUC Special Review Body, which was established to examine the future role and position of unions in Britain, issued its first report in 1988 (on the highly controversial issue of interunion competition for recognition agreements) and its second one (entitled 'Organising for the 1990s') in 1989. As part of the background work for the second report, six pilot studies of selected local labour markets were carried out (in which academics were well-involved) "to encourage more systematic use by trade unions of labour market information to inform their own strategies but also to develop a basis for possible future co-ordinated campaigns on recruitment/awareness at local level" (p. 2). These pilot studies have revealed important deficiencies in the existing internal information systems of many unions in that the unions concerned (1) were far from fully aware of the extent of the build-up of nonunion firms in the areas concerned, (2) had rather limited knowledge of the key organisational and workforce characteristics of these nonunion firms and, as a consequence, (3) had made strictly limited attempts to recruit members and obtain recognition in the establishments concerned; in the London Docklands pilot study, for example, only 25 percent of the firms surveyed recognised unions for collective bargaining purposes, with the vast majority of nonunion firms reporting that unions had made no attempt to organise them. The hope of the Special Review Body of the TUC is that these revealed deficiencies will stimulate a move away from an organising process which in the past has all too often been based on impressionistic, essentially anecdotal, sources of information. The need for such a move or change is suggested by one recent study

(Beaumont, 1987) which revealed that anecdotal evidence, when combined with one union's "policy" of automatically responding to individual members' requests to seek recognition at their workplaces, was largely responsible for the fact that the union's above average organising rate did not translate into anything like a comparable success rate.

Thirdly, a number of individual unions have initiated nonconventional organising/recruitment campaigns in the mid- to late-1980s:[2] these are but one part of a package of changes currently occurring in the union world in Britain which also includes (1) an increased number of mergers and amalgamations (the 112 TUC-affiliated unions in 1979 were down to 80 in early 1988, with a figure of 10 to 20 being forecast for the end of the century); (2) most of the larger unions have recently introduced new and improved membership benefit packages (one of the most recent initiatives along these lines is the Union Law Scheme which provides special legal assistance to members of all TUC-affiliated unions for personal and domestic matters); and (3) the increased negotiation of single union recognition agreement packages for new plants (a recent survey reported 52 such agreements, nearly half of which involved the EETPU which was expelled from the TUC in 1988). Among the most prominent of these campaigns has been the Transport and General Workers Union's (TGWU) "link-up" one, which was launched in 1987 to consolidate areas of existing strength, extend organisation into new and neglected areas of the labour market (e.g., women, young workers, ethnic minorities), and develop links with local community-based organisations. In addition the printing union, SOGAT, has initiated a national recruitment campaign (with a stated aim of producing 10,000 new members in 12 months) which is targeted at particular industries (e.g., provincial newspapers) and particular types of workers (e.g., women, part-timers, ethnic minorities). The general and municipal union (GMB) is seeking to recruit in industries which are growing in relative employment terms (e.g., hotels and catering) with particular emphasis being placed on providing for the protection of individual employee rights (e.g., discrimination, workplace health and safety) in the absence of well-established collective bargaining arrangements, and the shopworkers' union (USDAW) has actively sought to increase the recruitment of part-time workers in the retail trade with a view to raising their total membership above the 400,000 level.

These particular recruitment/organising campaigns are currently attracting a great deal of attention in the media, although they have not, as yet, been the subject of any detailed, systematic empirical research. Some preliminary discussions with officers of the TGWU have suggested that (1) it is difficult in practice to distinguish the link up effects from the normal processes of recruitment, but (2) prior to the introduction of the link up campaign, the TGWU was losing some 250,000 members per year in all 11 regions of the union, whereas (3) since the campaign, the decline in membership has been checked in eight of the 11 regions. However, some academics (Kelly and Heery, 1989) have already raised some important questions concerning the unions' ability to adequately sustain these campaigns over the course of time in view of the existing workloads, priorities, training, etc., of the full-time officers of the unions concerned;[3] in a union movement which has never been overly endowed with financial and manpower resources there is inevitably a trade-off between adequately servicing existing members and the extensive recruitment of new members, a trade-off that has been much sharpened by the labour market circumstances of the 1980s. Furthermore, it is useful to try and put these special campaigns into some sort of background context concerning the extent of more conventional organising activities, particularly in view of the key finding of a number of recent studies that a significant number of nonunion firms have experienced no union attempt to organise them (e.g., the London Docklands pilot study, mentioned earlier). In this regard we can report some preliminary findings from an ongoing analysis of some information contained in the 1984 workplace industrial relations survey, which is the most recent, large-scale, nationally representative survey (covering more than 2,000 plants in all sectors of employment) of plant-level industrial relations structures in Britain. One of the questions asked of the subset of nonunion plants in 1984 was whether any union had attempted to recruit members and/or obtain recognition there in the five years of 1979-84. The responses to this question yielded a dichotomous dependent variable of the form: no organising attempt was made or an attempt was made, but it was unsuccessful.[4] To date, our analysis has produced the following major findings: (1) there were attempts (all unsuccessful, by definition, given the nonunion status of these establishments in 1984) to organise manual employees in some 18 percent of the nonunion establishments, with attempts in the case of nonmanual employees accounting for some 13 percent of the nonunion workplaces;[5] (2) across industries, attempts to organise both manual and nonmanual workers were significantly associated with industries where the proportion of plants unionised was already relatively high (which may suggest, à la the median voter model, a concentration on reducing the elasticity of demand for existing members' services), although there was no significant relationship in either case with the level of union density at the industry level; and (3) a logit estimation procedure has revealed that *no attempt to organise* tended to characterise newer plants, smaller-sized plants, single-plant companies, and faster growing (in employment terms) plants. These particular relationships do not seem especially desirable ones from the union point of view, given the current trends in labour market structure in Britain.[6] A positive relationship between an organising attempt and the proportion of women and part-time workers in the plant seemed rather more encouraging in this regard, albeit the attempt was unsuccessful.

The Reasons for the Change in the 1980s

The various reasons for this changed position towards the issue of organising/recruitment can be grouped into the two subsets of *negative* and *positive* influences. In the former category, the most obvious and powerful influence has been the overall decline in union membership in the 1980s. For example, the years 1979-87 saw union membership as a whole in Britain fall by nearly 2.9 million or 22 percent, with the membership of the TUC-affiliated unions (some 80 out of the 330 unions in 1987-88) only being down by over 3 million or 25 percent in these same years (at the end of 1988 the membership of the TUC-affiliated unions totalled some 8,652,318 individuals, down from a peak of 12.17 million in 1979). There has not been a great deal of systematic analysis of the factors responsible for this union decline of the 1980s in Britain. Admittedly the early years of the 1980s have been included in a long time series analysis of variation in union membership (Carruth and Disney, 1988), but what has been particularly lacking has been an identification of the relative importance of the particular channels or routes through which this decline has occurred. As a contribution to the latter task, our own ongoing analysis of data contained in both the 1980 and 1984 workplace industrial relations surveys has indicated that (1) the proportion of manual (nonmanual) employees in establishments where unions were recognised for collective bargaining purposes fell from 83.7 percent (62.1 percent) in 1980 to 65.2 percent (48.9 percent) in 1984; (2) this decline has been particularly associated both with a relatively high plant-closure rate and an above average sized employment reduction for ongoing companies and plants in the unionised sector;[7] and (3) at the same time, there has been a relative growth in the size of the nonunion sector, in both plant numbers and employment size terms. These same sources of data have also revealed some of the key organisational characteristics of nonunion plants, which (for manual employees) include smaller-sized companies, smaller-sized plants, a relatively high proportion of part-time employees, a relatively small porportion of manual employees, a southern regions location, newer establishments, and high technology industries establishments.

A second negative influence has been the fact that the Employment Act 1980 passed by the Thatcher Administration repealed the statutory union recognition or representation procedures (i.e., Sections 11-16 of the Employment Protection Act 1975) which operated in the years 1976-80. Initially, the unions were not strenuously opposed to the repeal of these procedures on the grounds that (1) they had derived only limited *direct* gains (a 35 percent union win rate, resulting in some 65,000 workers being covered by collective bargaining) due to a combination of employer delays at the ballot stage, a failure to negotiate first contracts and an increasing entanglement in complex, unfavourable court proceedings and legal judgements (such as in the highly publicised Grunwick case), and (2) their belief that a more satisfactory, alternative public policy based route to recognition (i.e., voluntary conciliation/mediation facilities) which had yielded a higher union win rate (i.e., 43 percent) in the years 1976-80 was still to remain in force. However, since the repeal of the statutory recognition procedures (with their important, *indirect* effects on the operation of the voluntary conciliation process) and the changed labour market circumstances of the 1980s, the union win rate in recognition claims heard under voluntary conciliation arrangements has fallen quite substantially[8] (e.g., in 1988 the unions achieved recognition for collective bargaining in only 18 percent of cases, with a further 15 percent resulting in the obtaining of individual representation rights). These difficulties have resulted in a recent Labour Party draft policy document suggesting that a future Labour Government will introduce statutory union recognition procedures modelled on those which currently operate in Northern Ireland (*Sunday Telegraph*, 30 April 1989); the procedures in Northern Ireland differ from those that operated in the rest of the UK in 1976-80 in a number of ways and have yielded a relatively high union win rate (i.e., some 56 percent in 1977-84).

In short, it would appear that the unions now believe that even a more well-informed, proactive recruitment approach on a voluntary basis may not be completely adequate for the future. Indeed, at the 1989 annual meeting of the TUC, one of the motions passed called for the future establishment of a legally enforceable threshold of trade union membership at individual workplaces, which would lead to automatic trade union recognition.

The more *positive* influences causing the unions to re-think and re-orientate their position towards union organising/recruitment have been, firstly, a spread of some of the thinking associated with the 1985 report of the AFL-CIO Committee on the Evolution of Work; Lane Kirkland discussed such matters as the special guest speaker at the annual meeting of the TUC in 1987. As a result, a number of the ideas and issues being currently discussed by the TUC Special Review Body are far from unfamiliar to an American audience such as this one (e.g., coordinated campaigns, spatially concentrated campaigns, associate membership). A second positive influence has been some recent academic criticism of the Bain view that overall union membership growth is essentially exogenous to individual union control (Undy et al., 1981). The view of Undy and his colleagues is that a variety of evidence for the 1960s and '70s in Britain (e.g., differential growth rates between unions in similar environmental circumstances) indicates that individual, growth-orientated unions can positively influence not simply the interunion distribution of membership, but also, and most importantly, the overall level of membership. Although empirical research concerning this important debate is, as yet, limited (Beaumont, 1987), the general contention of Undy et al. has undoubtedly been viewed as a very positive message by a union movement searching for ways to check and reverse the overall decline in membership numbers in recent years.

Conclusions

As the union movement in Britain seeks, as a matter of environmental necessity, to embrace the message that it needs to raise the priority attached to new organising, it will inevitably have to confront some hard questions, choices, and trade offs. For example, Can individual unions as democratic organisations fail to respond to members' requests to seek recognition at their place of work even though they may be pursuing losing causes? Can training courses on organising skills be provided without reducing the provision of negotiating skills courses? Can hard-pressed officials be expected to increase their organising activities when existing members are demanding assistance to deal with redundancy and layoff situations? Is the traditionally decentralised nature of organising activity politically amenable to being drawn together in a coherent, corporate (union) plan? How will individual officers respond to the idea (being raised in some quarters) of incentive payments being offered for the recruitment of new members? The answers to these and other questions will only emerge from the highly political decision making processes of internal union readjustment, but it will be these answers which will be so important in shaping the future size and nature of the union movement in Britain, and elsewhere. Accordingly, it is to be hoped that the nature of such decision-making processes will figure prominently in the research agendas of industrial relations scholars in the not too distant future.

Acknowledgments

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Endnotes

[1] For example, Bain (1970, p. 93) reported that only 3 of the 60 white-collar union officials he interviewed spent more than 10 percent of their time on recruitment activities.

[2] The TUC has also undertaken a number of recent "union image" enhancement exercises, ranging from the commission of a recruitment video and presentations in schools to discussions with local development bodies responsible for encouraging inward investment to their areas.

[3] Kelly and Heery's (1989) survey of 63 TUC-affiliated unions in 1986 revealed that less than 40 percent (N = 23) had recruitment officers.

[4] The two questions that one ideally would like to address are the sequential ones of what distinguishes plants where no organising attempt was made from those where one was made, and, secondly, in the latter category, what distinguishes successful organising cases from those of failure. Most prior research has overwhelmingly focussed on the second question. This analysis provides a new, if limited, perspective on the first question, although ideally we would like to be in a position to estimate a multinomial logit equation for the three sets of cases.

[5] Given the overall union membership decline in 1979-84, it is difficult to believe that the proportion of union wins in the nonunion sector would be much above these figures.

[6] It seems unlikely, from discussions with union officers, that information on the characteristics of the nonobserved union win cases would fundamentally change these relationships.

[7] Plants which recognised unions for manual employees experienced a 41 percent reduction in average employment size in 1980-84, while plants not recognising unions declined in size by only 8 percent on average.

[8] The absolute number of completed conciliation cases concerning recognition has fallen from 697 in 1976 to 165 in 1988. If these figures are a reasonable proxy for the trend in the overall organising rate for these years, then they help to put the special recruitment campaigns in some sort of perspective, albeit a not particularly positive one from the union point of view.

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Artificial Intelligence Techniques and the Formulation of Union Organizing Strategy

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Spurred on in large part by the precipitous decline in membership during the first part of this decade, American unions are now experimenting with a variety of nonconventional organizing techniques (e.g., corporate campaigns, associate membership, blitz campaigns). The literature to date provides only limited analysis of the manner in which unions formulate organizing strategies. This paper is an abridged version of a longer paper that explores ways in which artificial intelligence techniques can be used to simulate strategy formulation and explore the role of nonconventional tactics in organizing. Readers may obtain the full version of the paper, which contains listings of simulation results, from the author.

Artificial Intelligence Methods

To formulate an effective strategy, the contemporary union organizer must sort through a maze of ambiguous, complex, and contradictory information regarding the nature and impact of different tactics on organizing outcomes. The information processing and decision making demands posed by contemporary conditions severely limit the capacity of organizers to make choices within a conventional, rational choice framework. But there is, nonetheless, pressure for organizers to act in a more sapient fashion. One approach to reconciling these competing influences is to think of strategy formulation in terms of bounded rationality. A model of strategy formulation can then be built around the heuristic and cognitive methods organizers might use in seeking out a satisfactory, rather than an optimum, approach.

Artificial intelligence (AI) techniques—essentially computer applications designed to replicate human cognitive processes—have

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been around since the 1950s. An expert system (ES) is an AI application designed to capture the decision processes of individuals with specialized and relatively arcane knowledge. The expert possesses considerable knowledge which is loosely integrated and difficult to reduce into a well-structured set of procedures and rules. In reaching decisions, the expert is often called upon to process qualitative and highly symbolic, rather than quantitative, data. There may be large information gaps; when encountered, the expert may have to apply rules to infer missing information or devise information processing strategies that circumvent the problem. Problem solving is, in essence, an exercise in the exploration of the complex web of relationships, probing various pathways until a seemingly workable solution is uncovered. Thus, expert systems are not based on some deterministic algorithm but rather on a collection of search rules which parallel those of the expert upon whom the system was modeled.

There are some basic AI concepts that the reader needs to understand in order to follow the simulations presented in the next section. The program used here was written in PROLOG. PROLOG is an acronym for PROgramming in LOGic and was specifically designed for AI applications. It is based in what is known in logic as predicate calculus. Predicates may either be definite facts or rules which generate facts. In general, predicates assert relationships among objects and/or associate attributes to objects. Once a knowledge system (represented by a series of different predicates) is assembled, the programmer (or user through some interface) asserts predicates which are either hypotheses or queries. The core of the system is an "inference engine" built into PROLOG which tests hypotheses or answers queries through a matching process by comparing an assertion to facts and rules in the knowledge base. As the knowledge base can be quite large, this can be a very involved process. The programmer can augment the inference engine by writing statements that constrain or guide the search process. In expert systems, these statements often reflect information processing and decision making heuristics of the expert(s) upon whom the system is modeled. ES predicates thus describe knowledge and techniques for processing knowledge.

Components of the Organizer Expert System

The objective of this study was to construct a relatively simple, expert system-like program, based on the author's perceptions, to serve as prototype for a more sophisticated system. There are many ways in which the knowledge base for this system might have been organized. Given an interest in the nature of nonconventional tactics and the conditions under which they might be chosen, the system was designed to model the evaluation of tactics. About twenty common organizing tactics were drawn from the literature, including both conventional (e.g., literature distribution, mass rallies, and meetings) and nonconventional tactics.

A predicate defines the properties of a tactic. These properties are highly subjective estimates of the author, but in any expert system subjective evaluations would play a critical role. Indeed, it is the experts perceptions that are more relevant to decision making than objective conditions. In many instances, subjective estimates may be the only information available. For purposes of this exercise, judgments were made regarding the expected costs and impact of a given tactic.

Costs

Five cost dimensions were identified: financial costs, staff time, rank-and-file time, political impact, and social resources. Each dimension was evaluated in qualitative terms ("high," "moderate," "low," or "uncertain" costs). For example, a conventional tactic, such as holding meetings and rallies, would be high in its use of staff and rank-and-file workers, probably moderate in terms of financial costs, and low in terms of political impact and social costs. In contrast, media campaigns would be high in financial costs, moderate in staff time, and low on the other dimensions. Political costs relate to the intraunion conflicts that certain tactics seem to generate (e.g., associate membership and blitz campaigns), while social resources consumed are relatively high when a tactic involves significant interaction with nonunion organizations or the broader community (e.g., harassment of business associates, strikes, or external coalitions). Some, but not all, of the cost factors are used in the simulations.

Impact

Data structures in expert systems can be complex, as is illustrated in the treatment of impact measures. We know that tactics will probably have different effects under varying conditions. In this system, both management opposition ("high" versus "low") and employee union proneness prior to any union intervention ("strong" versus "weak") are treated as exogenous influences. Thus four contextual conditions are specified for each tactic (high management opposition coupled with strong employee support, etc.). Here again subjective estimates are used but in a somewhat different fashion than in the case of costs. The likelihood of the unit becoming organized without any organizer intervention (or with minimal intervention)—that is the likelihood of self organization—is taken as a reference point. A subjective estimate, using a scale of 0 to 100 percent, was used to express a degree of belief that a particular tactic would, under the given contextual conditions: (a) improve the chances of union victory, (b) decrease the chances of union victory, and (c) have no effect. Given uncertainty, subjective probabilities can be assigned to all three categories, but these probabilities must sum to 100 percent across the categories. Thus, organizers could both believe and disbelieve, with varying intensities, that the tactic would improve victory chances. As an example, one would expect many of the conventional tactics to have high subjective probabilities of improving union changes given strong employee support and low management opposition. Conversely, blitz campaigns might be expected to have their greatest impact where employee support is strong and management opposition is high. It is not possible, of course, to provide a detailed rationale here for all of the judgments regarding impact built into the system. These impact perceptions play a critical role in the evaluation of different strategies.

Relationships Among Tactics

Other predicates are included in the expert system which indicate certain types of relationships among tactics: complements, contradicts, and overlaps.

Simulation Method

The program has the capacity to respond to very complex queries designed to derive appropriate organizing strategies or to test the likely consequences of a strategy proposed by the user (composed of tactics within its knowledge base). These queries or hypotheses may include references to costs as well as likely outcomes. This section discusses four very simple simulations based on the author's evaluations of the effects of various tactics under different conditions. This exercise serves to provide some insights into the conditions favoring nonconventional versus conventional tactics, as well as to illustrate how such a system might function in practice. These results, of course, are only exploratory.

These simulations involve queries to the system regarding strategies in each of the four contexts defined by the intersection of management opposition (high-low) and employee union proneness (strong-weak). These conditions are predefined; in a functioning system, evidence relating to the conditions prevalent in and around the target unit would be used to infer management opposition and employee support.

Each of the four organizing strategies discussed below was selected using the same decision strategy. This decision strategy is seen as one approach that an intentionally rational organizer might take under conditions of ambiguity and limited information. A "real world" system would presumably be built around decision strategies suggested by actual experts. Hence, this system is based on a normative rather than descriptive decision heuristic. In either event, the organizing strategies derived are "satisficing" rather than globally optimal in character. Indeed, the supposition is that satisficing choices are the only ones possible in such an ill-structured decision context. The search strategy, however, is designed to generate choices that at least begin to approach optimality by trading off risks against expected positive outcomes.

The search strategy used has several steps. First, the knowledge base was scanned sequentially for tactics that, under the predefined contextual conditions, are expected to be more likely to increase than to decrease the union's victory chances. Second, when a tactic was selected by this criterion, it was compared against all other selected tactics to determine if there were any strong and direct overlaps. If an overlap was detected, the two tactics were compared in terms of expected impact; the one with the greater expected impact is retained, while the other is deleted. Third, a similar procedure was used to detect and resolve contradictions among tactics. If two tactics are strongly contradictory (according to the information in the knowledge base), then the tactic that is seen as least effective will be deleted and the other retained. Fourth, once the primary tactics of the strategy were chosen, the program identified potentially complementary tactics from among the set of tactics *not* included in the strategy. These were included as suggestions in the proposed organizing strategy.

Once developed, a strategy is evaluated in terms of the likelihood that it might increase, as well as decrease, the union's victory chances. This is done by means of *confidence factors*. The theory underlying confidence factors is beyond the scope of this paper. Confidence factors for individual tactics are essentially equal to the subjective beliefs assigned to the tactic concerning its positive and negative impact of union victory chances. The *joint confidence factors* for the suggested primary tactics are computed in a more involved fashion that is based on a mathematical theory of evidence handling and involves combining the tactic-specific confidence factors. The joint confidence factors provide an overall evaluation of the proposed strategy; the ratio of the positive and negative joint confidence factors (*risk ratio*). This index can be used to judge the net uncertainty of the proposed strategy; the greater its value, the less risk the strategy in comparison to its likely positive impact on the union's victory chances.

Results

The results of the four simulations are summarized here; space does not allow that the results be reproduced, though interested readers may obtain these from the author.

Low Management Opposition/Strong Employee Support

This setting is the most hospitable to a union as the unit essentially self-organizes. Most of the recommended tactics here are conventional tactics common to the traditional organizing campaign described earlier. There is little need to apply pressure against management, since it assumes a relatively benign stance. Certain nonconventional tactics enter into the picture, most notably associate membership programs. However, the associate membership was selected because, under this condition, it may modestly improve union victory chances with little risk (note confidence factors). However, the more conventional tactics are, for the most part, the most strongly recommended (again by reference to the confidence factors), since they are likely to strongly increase victory chances with limited risk. Overall, the joint confidence factors and risk ratio suggest that this is, as expected, a very supportive setting for an organizer. More than anything, these results suggest the validity of the system, since the proposed strategy is pretty much the standard in a traditional organizing context.

High Management Opposition/Weak Employee Support

In contrast to the first scenario, this is the least supportive context for organizing, yet one which may be among the most common in the contemporary world. The organizer has the dual task of deflecting management opposition and building employee support. A main concern would be target evaluation, which allows the union to screen out those units that have little possibility of victory. Secrecy is also vital, as reflected in such complementary tactics as underground campaigns, since management is likely to take swift action should the organizing effort become known. Efforts to attract supporters are also low-key (e.g., community outreach programs and general media campaigns). Should the union win the campaign and management refuse to bargain, corporate campaign tactics (harassment of management and complementary tactics) are preferred to workplace methods (which are very risky for the workers involved), though these methods are not likely to be all that effective. The program's overall confidence assessment is distinctly inferior to the first scenario.

High Management Opposition/Strong Employee Support

If the first scenario is increasingly unlikely in the contemporary world and if organizers generally try to avoid the second, then this scenario represents what may well be the most typical organizing context in coming years. Management must contend with aggressive union-avoidance efforts by management, but it has a strong base of support from which to build. Not surprisingly, it is here that many nonconventional tactics are recommended, either as primary or complementary tactics. Associate membership and community outreach programs help consolidate and maintain support over what might be lengthy organizing drives (if management succeeds in delaying an election). Target evaluation methods may screen out weaker targets and also assist in projecting management strategy. The program also suggests the use of blitz campaigns. These would be most effective in this context because the union already has considerable support (thus does not need time to build support) and will tend to catch management off guard. Should management resist negotiating an initial contract if the union wins representation rights, then the program suggests a number of nonconventional pressure tactics, including the possibility of both in-plant strategies and corporate campaigns. The assumption is that strikes and related techniques will generally fail in such settings since management will endeavor to operate during a strike and probably hire permanent replacements. Hence, it is in this setting that nonconventional forms of pressure are apt to work best.

It is important to note that this strategy is not without considerable uncertainty and risk, largely because many of these tactics are relatively novel. The joint confidence factor indicates that this strategy is associated with a chance of failure not much less than the chance of success.

Low Management Opposition/Weak Employee Support

The final setting is, as with the first scenario, not likely to be very common nor, on the surface at least, very attractive to unions. Most of the tactics recommended here are conventional, with a focus on influencing employees to support bargaining. Tactics directed at management are not particularly needed given limited opposition.

Conclusions

This paper has described in general terms the role that certain AI methods might play in helping us to understand how organizers and union leaders develop organizing strategies and in helping unions to improve the quality of strategic choices. This model is simple and based on the author's perceptions of the nature and impact of conventional and nonconventional organizing tactics. It is therefore only a prototype system and full implementation of ORGANIZER, as a research or a practical tool, requires considerably more work. Yet the simulations done here are suggestive of a system that holds some promise.

DISCUSSION

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Ten years ago union organizing and contract negotiation were viewed as separate processes. Unions gained representation rights through winning NLRB elections and obtained contracts through strike threats. The first was a political process, the second an economic one. Today the distinction between these two processes is much less clear. Winning an election doesn't necessarily mean winning a contract, and strikes themselves have lost much of their impact. So we are back to the 1920s, with unions being forced to adopt new strategies, tactics, and organizational forms—innovations which this symposium discusses. The three U.S. papers report the first steps in ongoing research projects.

John Lawler gives us a new computer game. I had always assumed that Pac-Man really meant Political-Action-Committee-Man. John's game, in time for Christmas 1990 sales, is Organizer-Man. Plug in the appropriate facts and Organizer-Man will tell you the most appropriate organizing strategies to use in any given situation, from corporate campaigns to face-to-face contacts.

Since I doubt union organizers will trust computers to make critical decisions, Organizer-Man's main value may be for academicians with a decision-theory bent. It requires researchers to consider a broader range of questions than they might otherwise do, and thus makes the analytic process more relevant. Its utility depends largely on the validity of the analytic rules built into it and the accuracy of the information it evaluates.

Of all the new organizing techniques, associate membership has received the most recent research attention. Sherer and Leblebici point out that this technique is not particularly new: numerous union constitutions permitted associate membership long before the Donahue report. Their discovery raises some other questions: What circumstances have led unions to provide such membership? How many people (and of what kind) have taken advantage of it?

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My own view is that associate membership is an imaginative idea but only a *very* partial answer to labor's problems. Associate membership, as the authors point out, implies a somewhat different role for unions than just collective bargaining. But what role? The Donahue report suggests a return to unions' 19th century role as friendly societies. But is a union credit card or buying union insurance likely to make one identify more closely with unions or union objectives? This is yet to be shown.

A second model is for unions to be primarily political organizations, perhaps as they are in France. Logically this might lead to several competing unions in every workplace. A third model seems more useful: it is that of the minority representative. Even if the union can't win majority status, it might process individual grievances and represent members before the Equal Employment Opportunity Commission, Occupation Safety and Health Act, Workers' Compensation Boards, and the like. This may already be the chief function of some public employees unions, which legally have majority representation rights but only a handful of members.

All three models have the weakness of not being centered on the workplace. All posit an *individual* relationship to one's union—like my membership in the AAA—rather than a group membership. Yet groupeyness—solidarity if you like—is part of the union's essence. All three are rather pale substitutes for collective bargaining unionism.

This emphasis of solidarity brings me to the McClendon paper. By now there is general consensus that the decision to support a union is a function of three factors. The first is dissatisfaction or even anger (as McClendon discusses). Second, the union has to be perceived as an instrument for remedying this problem—and the decision here is made in cost-benefit terms since supporting a union involves costs which may offset any perceived gains. How workers end up depends on a third factor, their overall evaluation of unions generally, either positive or negative.

But alone these three factors do not explain union support, because how workers perceive their situation depends heavily on their colleagues and particularly on activists and informal leaders. But here we face a major complication, because the factors that explain union support are not the same ones that explain union participation or leadership.

Some 40 years ago, I examined the spread of unionism over a three-year period through a public utility, in which the union lost two elections and won the third. I was concerned with how union support spread gradually from one work group to another and in particular the role of informal leaders in swinging their groups. A key finding is that groups differed and so did their leaders. We felt we could predict the difference among these groups based on such factors as status, technology, and communications opportunities. My point is to add emphasis to what McClendon is saying and to stress that only rarely do unions organize *workers*; they organize work groups. The appropriate level of analysis may be not the plant, the industry, or the individual, but the face-to-face groups.

As the Beaumont and Harris paper describes, Britain seems to have caught the American disease. Unions are in decline in both countries and many of the same research questions are being asked. The findings are surprisingly alike, including the low priority being given to organizing by some unions and some union leaders. A big difference is that Britain has much better plant-level data than we have in the U.S.

VI. ISSUES IN INCOME REPLACEMENT PROGRAMS

Health Care Costs in Workers' Compensation

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The workers' compensation program provides cash benefits, medical care, and rehabilitation services to workers who experience work-related injuries and diseases. Although state laws vary in matters such as benefit levels, there are some common features in state workers' compensation programs. Cash benefits do not replace 100 percent of lost wages: there are waiting periods (such as three days of lost work) before benefits begin, and only a portion (such as two-thirds) of preinjury wages is replaced. Thus, the cash benefits payment system in workers' compensation relies on deductibles and coinsurance as incentives for return to work. Other common elements of workers' compensation programs are that medical benefits are provided without deductibles or coinsurance, and that employees do not directly pay any of the insurance premium.[1]

There is relatively little regulation of the workers' compensation health care delivery system by the states, compared to the extensive regulations for programs such as Medicare. About half of the states now have fee schedules that at least cover physicians' services for workers' compensation, although most of the schedules are of recent origin. A number of states also limit the employee's choice of treating physician.

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The health care delivery system in workers' compensation is relatively fragmented. In a typical state, there are hundreds of private insurance carriers and hundreds of self-insuring employers who are the payers. The providers are generally the physicians, hospitals, and other providers who are part of the general health care system.[2]

Recent Concerns

Health care costs have become a subject of concern in workers' compensation because of increases that have occurred in the past few years. Within workers' compensation, health care payments grew more rapidly than cash benefits during the 1980s. Medical benefit payments, as a percentage of all workers' compensation benefits, increased from 33.0 percent in 1980 to 38.0 percent in 1987, the most recent year for which data are available (Burton, 1990).

Moreover, workers' compensation health care costs increased more rapidly than those elsewhere in the economy. Total health care expenditures in the U.S. were up 102 percent between 1980 and 1987, while workers' compensation health expenditures increased by 151 percent in these seven years. (Burton, 1990).

The large differences among states in workers' compensation health care costs are another source of concern. A recent compilation of workers' compensation health care benefits showed a national (43-jurisdiction) annual average of $12.4 million per 100,000 covered workers. Even among the continental states, the range around this national average was from 245.7 percent of the national average (in Oregon) to 43.1 percent (in Vermont) (Burton, 1989, Table 2).

Research projects

The concern about health care costs in workers' compensation has provoked considerable interest among practitioners, policymakers, and researchers. Two strains of that research are briefly highlighted in this paper: (1) several projects that we are jointly conducting with the Minnesota Department of Labor and Industry's Research and Education Division (the *Minnesota Study*), and (2) a project recently completed by the Workers Compensation Research Institute (the *WCRI Study*).

Extensions and Qualifications on the Interstate Differences

As indicated before, there are substantial differences among the state workers' compensation programs in the costs of health care. The relative costs of six states are assessed in Table 1 using three data sets; to facilitate comparisons, Minnesota's costs are set equal to 1.00.

TABLE 1
Workers' Compensation Health Costs: Interstate Differences in Levels

Jurisdiction	Average Medical Costs, All Claims, 1984		Medical Costs per 100,000 Workers		Average Medical Costs per Case	
	(1)	(2)	(3)	(4)	(5)	(6)
Minnesota	$1,023	1.00	$19,527[a]	1.00	0.943	1.00
Michigan	671	0.66	12,528	0.64	1.356	1.44
Florida	1,004	0.98	15,699	0.80	1.179	1.25
Oregon	1,156	1.13	30,421	1.56	1.167	1.24
Illinois	760	0.74	8,134	0.42	0.908	0.96
New York	713	0.70	7,808	0.40	—	—

Note: [a] In thousands.

The first comparison uses data from the *WCRI Study* on the average medical costs per workers' compensation claim in 1984 for all claims (including those that paid cash benefits as well as those with medical benefits only). Among the six states, Minnesota's medical costs are exceeded only by Oregon's, where costs are some 13 percent higher.

The second comparison, which relies on data from the 1989 edition of the NCCI *Statistical Bulletin*, involves the annual medical benefits per 100,000 workers for all claims (including medical only claims). Again Minnesota ranks second among the six states, while Oregon is the most expensive. The rankings of some of the other states change, however, and the range among the states is greater than for the first comparison.

The third comparison involves data from the NCCI's *Detailed Claim Information* (DCI) database for injuries that occurred in 1984. Claims from 13 states were classified into 50 cells that were defined by (a) 25 injury categories and (b) whether the injured worker was hospitalized. The national distributions among the 50 cells were used as weights, together with each state's average costs for claims in each of the cells, to construct an overall average of health care costs for that state. The fixed weights were used to control for interstate differences in the mix of injuries. These data produce a ranking of states that is markedly different than the first two comparisons. Minnesota ranked second (behind Oregon) in the first two comparisons; for the third comparison, for which data are available for only five of the states, Minnesota is the next to the least expensive state. The differences in the results of the three comparisons provide a warning that interstate rankings of workers' compensation health care costs must be used with caution.

The same cautionary note is necessary for the data in Table 2 pertaining to growth rates in medical care costs in various states. The data in Column 1 are from the *WCRI Study*, while those in Columns 2 and 3 were calculated using the DCI data. Minnesota's record relative to Illinois' in Columns 1 and 2 is an example of an apparently inexplicable disparity.

TABLE 2

Workers' Compensation Health Costs: Interstate Differences in Growth Rates

	1980-85 (inflation adjusted)	1980-84	1984-87
	(1)	(2)	(3)
Minnesota	7.0%	27.3%	35.8%
Michigan	3.3	27.3	11.7
Florida	7.0	27.6	29.7
Oregon	11.5	—	48.9
Illinois	5.7	14.4	20.2
New York	7.6	—	—

Note: The inflation adjustment in Column 1 is based on changes in the medical care component of the consumer price index.

What Explains the Interstate Differences?

A few efforts have been made to explain the interstate differences in workers' compensation health care costs and in the rates of increase of those costs. Given the problems previously identified with developing consistent rankings for interstate cost differences, it is probably not too surprising that efforts to explain the interstate cost differences have not been very successful.

The *WCRI Study*, for example, investigated whether states with high costs in other areas of medical care generally have high workers' compensation medical costs. The study of 42 states found (at page 26) that the two types of medical costs showed a "very weak relationship."[3]

The *WCRI Study* also found that two of the traditional methods used to control health care costs in workers' compensation had little apparent impact. The average annual growth of health care costs per claim between 1965 and 1985 was compared for those states that used fee schedules for at least 15 years during the interval with those states without fee schedules. The use of fee schedules had no apparent effect on the growth in health care costs. Likewise, those states that allowed employers or insurance carriers to choose the initial treating physician had no slower growth in health care costs than those states that allowed the employee to choose the treating physician.[4]

These results may convey too pessimistic a view concerning the ability of states to influence the costs of health care in their workers' compensation programs. One reason the results may be misleading is that the statistical analyses to date have been rudimentary. As noted in the *WCRI Study* (at 37), many factors may be operating simultaneously to affect medical care costs, and multivariate analysis rather than simple correlation statistics may reveal that such policies as fee schedules are effective. Another reason is that certain states, such as New York, stand out as having relatively low medical costs in 1984 and a relatively low growth rate in these costs during the 1980s. New York has had stringent hospital cost regulation, has used fee schedules for physicians for 50 years, and the State Insurance Fund, which accounts for a significant portion of the New York benefits, does extensive reviews of medical care utilization. The particular features that have enabled states such as New York to achieve relatively low costs and the multivariate analysis of interstate cost differences are being investigated in a study by Silvana Pozzebon at Cornell University.

What Explains Intrastate Differences?

The *Minnesota Study* examined the differences in Minnesota between the costs of health care in the workers' compensation program and the costs in the Blue Cross program. We expected that the costs in the workers' compensation program would be higher, given the absence of either coinsurance, deductibles, or limits on the amount of care provided by the program. In addition, the fee schedule in the Minnesota workers' compensation program is less inclusive than the Blue Cross schedule, and Blue Cross appears to do a more intensive utilization review than does the typical workers' compensation carrier.

A multivariate model was used to estimate between-group differences in the average costs of health care, controlling for the personal characteristics of the injured persons, the mix of health care providers, and the quantity of health care services used to treat particular types of injuries. The "experimental" group was a sample of workers' compensation claims in Minnesota, while the "control" group consisted of injured workers whose medical care costs were paid by Blue Cross in Minnesota. This separation was based on the Oaxaca decomposition procedure.[5]

Given the lack of cost sharing and effective utilization review in the workers' compensation program, we postulated that the biggest differences between the costs of the Blue Cross and workers' compensation programs would be for those types of injuries for which there are the greatest number of alternative modes of treatment.

The obvious candidate for an injury that allows exercise of discretion concerning treatment is a back injury; we thus expected back injuries to show the greatest difference between the workers' compensation and Blue Cross programs in terms of costs of treatment. Injuries such as sprains and strains are also likely to involve much latitude in decisions concerning their treatment. In contrast, fractures to lower and upper extremities (i.e., legs and arms) tend to have a standardized treatment pattern that is likely to be observed regardless of which medical care program is responsible for payment. Lacerations also are likely to involve a relatively standardized treatment protocol.

Table 3 provides the data for the four types of injuries, comparing the ratio of workers' compensation charges to Blue Cross charges at three stages of the control procedure. Panel A presents the ratios of the mean charges in the two programs without any controls: the workers' compensation charges are higher than the Blue Cross charges for all injuries combined, as well as for each of the four injury types. Panel B presents the ratios of the mean charges after controlling for worker demographic characteristics (e.g., age and gender) and for types of injuries (e.g., the "all injuries" comparison involves a similar distribution of injury types). The Panel B results again show that the workers' compensation charges are consistently higher than the Blue Cross charges.

The comparisons of charges in Panel C of Table 3 additionally control for the mix of providers (e.g., physicians and chiropractors); the nature and quantity of health services provided (e.g., the number of X-ray and lab tests); and hospital and surgery use (e.g., hospital treatment). The results in Panel C indicate that even after controlling

TABLE 3

Comparisons of Workers' Compensation and Blue Cross Medical Charges

Panel A: Uncontrolled Mean Charges	
The Ratio of Workers' Compensation Charges to Blue Cross Charges:	
All Injuries	1.75
Back Injuries	2.49
Sprains/Strains	2.23
Lacerations	1.55
Fractures	1.34
Panel B: Partially Controlled Charges	
Workers' Compensation Charges Relative to Blue Cross	
All Injuries	2.40
Back Injuries	2.43
Sprains/Strains	2.37
Lacerations	1.39
Fractures	1.18
Panel C: Fully Controlled Charges	
Workers' Compensation Charges Relative to Blue Cross	
All Injuries	2.04
Back Injuries	2.30
Sprains/Strains	1.95
Lacerations	1.55
Fractures	1.00

Source: Minnesota Department of Labor and Industry, Research and Education, 1990.

for demographics, quantity of health services, et al., the medical charges in workers' compensation are higher than those in the Blue Cross program for "all injuries combined" and for three of the four injury types.

The results in Panel C are striking, not only because they indicate that workers' compensation medical charges are much higher than medical charges for equivalent conditions and services in the Blue Cross program, but also because of the pattern of relative charges for the four types of injuries. We hypothesized that back injuries as well as sprains and strains would show the greatest disparity between workers' compensation and Blue Cross, while lacerations and fractures would show the least difference; the results are consistent with the hypothesis. It appears that for those injuries for which providers or patients have discretion in treatment, the workers' compensation program pays more.

Policy Implications

The emerging evidence on health care costs in workers' compensation provides tentative support for several conclusions and public policy strategies.

There is evidence that health care costs are rapidly increasing in workers' compensation programs. The absence of measurable effects of current cost-containment strategies suggests, however, that drastic reforms of the current workers' compensation approach to health care are premature. This is especially true since workers' compensation is only a small part of an overall health care system that is experiencing rapid increases in costs and quick changes in public policy. To the extent that workers' compensation has a problem with health care costs, the difficulty is likely to be ameliorated or aggravated by developments elsewhere in the health care system. This limits the potential impact of reforms within the workers' compensation program.

Moreover, the "traditional" methods of health care cost containment in workers' compensation—namely fee schedules and limits on the employee's choice of treating physician—seem largely ineffective. The few success stories appear to involve a state like New York, which relies on utilization review and on comprehensive hospital fee schedules that apply to all segments of the health care system, not just to the workers' compensation program.

The limits of the traditional cost containment methods in workers' compensation suggest that experience from other parts of the health care system should be particularly valuable in designing effective cost containment strategies for workers' compensation. Unfortunately, many of the innovations in the health care system that were designed to limit cost increases—such as PPOs and HMOs—have not been particularly effective. The most successful cost containment policy appears to be the use of cost sharing—with patients asked to bear part of the costs of health care through the use of deductibles and coinsurance.

The use of cost sharing in the workers' compensation program would be a controversial innovation, to say the least. The standard for workers' compensation that has been generally espoused is that appropriate medical care should be provided without arbitrary limits and without cost to the injured worker. Introduction of coinsurance and deductibles into workers' compensation would probably require an offsetting change elsewhere in the program to make the cost sharing palatable.

Endnotes

[1] Washington requires employees to pay a portion of the workers' compensation premium attributed to health care.

[2] A few carriers have their own health care facilities for rehabilitation of workers with serious injuries. Several states also operate rehabilitation facilities.

[3] The correlation between workers' compensation medical costs and nonworkers' compensation medical costs for the 42 jurisdictions was 0.14.

[4] The correlation between the average annual medical cost growth rate and the use of fee schedules is −0.08; between the growth rate and employer choice of physician is −0.01. *WCRI Report* at 37-38.

[5] The Oaxaca decomposition is widely used to separate majority-minority wage differentials into an amount attributable to worker characteristics ("endowments") and an amount attributable to discrimination. See Oaxaca (1973); Johnson and Burton (1989).

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Unemployment Insurance Trust Fund Adequacy

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State unemployment insurance (UI) pays benefits that provide partial wage loss replacement for the unemployed. It has been an important social insurance program in the U.S. for more than 50 years. During the 1980s, there have been two major developments in UI: (1) an unprecedented reliance on loans from the U.S. Treasury to make benefit payments and (2) a sizeable reduction in the availability of program benefits to the unemployed. Both developments are related to a problem of inadequate benefit financing which first emerged in the 1970s. Trust fund balances in many states were not large enough to meet the heavy demand for benefits from eligible unemployed workers. Individual states in this situation responded in different ways; by borrowing from the U.S. Treasury, raising UI taxes, or restricting the availability of UI benefits.

This paper covers three topics. It first reviews the UI funding problems of the 1970s and 1980s and then examines aspects of fund adequacy. A UI trust fund simulation model is described and the results of selected simulations are summarized.

Based on simulations in seven large states, three principal conclusions are reached: (1) A serious future recession would lead to a renewed need for substantial UI loans unless states with inadequate reserves acted to substantially raise employer taxes and reduce UI benefits while still in recession; (2) The solvency taxes currently in place would not act with sufficient strength to prevent borrowing in a serious future recession; and (3) Restrictions on UI benefits implemented in the early 1980s will cause the level of future borrowing to be less than under the earlier regime of benefit availability.[1]

Funding Problems in the 1970s and 1980s

Prior to the decade of the 1970s, the UI system was generally

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adequately financed and only a few programs ever needed loans from the U.S. Treasury to assist in paying program benefits. There had been a gradual erosion of reserve positions over the preceding 20 years, but widespread borrowing only began with the recession of 1973-75. That recession, however, was very severe with the annual unemployment rate reaching a peak of 8.5 percent in 1975. Sixteen different UI programs needed Treasury loans in 1975 and during the following three years the number of programs that borrowed was 23, 20, and 11, respectively. The dollar volume of loans was highest in 1976, the second year of high unemployment. Insolvent UI programs borrowed $1.9 billion in 1976, as well as $1.5 billion in 1975 and $1.3 billion in 1977. Over the entire six-year period from 1974 through 1979, loans totaling $5.54 billion were disbursed to 25 insolvent UI programs (22 states plus the District of Columbia, Puerto Rico, and the Virgin Islands). The loans represented 10.0 percent of total UI benefit payments made during these six years.

Although net reserves were increased at the end of the 1970s, the total accumulation was modest by actuarial standards. In fact, 13 programs still had outstanding debts at the end of 1979. Back-to-back recessions in 1980 and 1981-82 caused the demand for benefit payments to rise sharply in the early 1980s. Renewed borrowing commenced in 1980 and peaked in 1982 and 1983, the years of highest unemployment over the entire post-World War II period. Loans during 1982 and 1983 totaled $11.8 billion, and the number of programs needing loans peaked at 28 in 1983. Loans also continued after 1983 with $9.1 billion of disbursements from the U.S. Treasury between 1984 and 1987.

Over the entire eight years from 1980 to 1987, loans totaling $24.0 billion were made to 32 insolvent UI programs. By year, the number of states needing loans ranged from a low of 8 in 1980 and 1987 to a high of 28 in 1983. The loans represented 19.2 percent of total benefits paid by the states to unemployed workers in these eight years. Loans were roughly twice as important to the states during 1980-87 as they had been during 1974-79 (19.2 percent of benefits versus 10.0 percent, respectively, in the two periods).

Because the programs entered the 1980s with such low trust fund balances, the large benefit outlays of 1982 and 1983 caused aggregate net reserves (total reserves less outstanding debts) to become negative and reach a level of −$5.8 billion at the end of 1983. The net indebtedness of the 23 debtor programs at the end of 1983 exceeded the positive balances of the other 30 programs by almost $6 billion. A situation of negative net reserves had never occurred in the history of U.S. state UI programs.

With the economic recovery since 1983, the states have made sustained and large-scale additions to net reserves. For the six years 1984 through 1989, net reserves increased by nearly $44 billion to reach a net balance of $38 billion at the end of the current calendar year.[2] In each year of this period, net reserves (total reserves less outstanding loans) increased by at least $5.0 billion. The December 1989 balance will represent about 1.9 percent of total payrolls. This 1989 reserve ratio of 1.9 percent is the highest end-of-year level since 1973.

Although the mid- to late-1980s have seen a major increase in the fund balances of the states, a reasonable question to pose is how adequate would reserves be if there were to be a serious recession. The remainder of this paper summarizes results of a simulation analysis of UI trust fund reserve adequacy that was conducted at The Urban Institute.

A UI Trust Fund Simulation Model

Questions about UI trust fund reserve adequacy can be examined within the framework provided by a simulation model. Each state model is a LOTUS spreadsheet with from 70 to 90 equations. The models have a recursive structure that matches the financing arrangements for UI benefits, i.e., higher benefits payments reduce the current year's trust fund balance, and then, through experience rating, influence next year's employer payroll taxes. Each model is annual and each model has five main blocks of equations.

The primary state labor market variables which affect UI taxes and benefits are determined in Block 1. These variables which are exogenous in the model include the total unemployment rate, the inflation rate, the interest rate on UI trust fund balances, and the labor force growth rate. Inflation enters the model through the rate of change of average weekly wages. The total unemployment rate (TUR) is the most important exogenous variable because it ultimately drives the volume of claims for UI benefits. Total state employment and UI-covered employment are also determined in Block 1.

Block 2 determines annual benefit payments, both in regular UI and the Federal-State Extended Benefits (EB) program. A weekly benefit amount and weeks compensated are multiplied to determine the annual flow of benefit payments for both regular UI and EB. Insured unemployment (IU) is the key variable in the block. The determination of insured unemployment is done similarly in the individual states. The three main explanatory variables are current unemployment (TU), a control for exhaustions (TU lagged one year) and a dummy variable for changes in program eligibility and participation in the 1980s. In regressions to explain IU, a dummy variable for 1981 and later years enters with a negative and statistically significant coefficient in most states where models have been developed.

Total tax payments are determined in Block 3 as the product of total covered wages, the taxable wage proportion, and the effective tax rate on taxable wages. Total covered wages are known from variables determined in Block 1 (i.e., UI-covered employment and the average weekly wage). The taxable wage proportion depends mainly on the ratio of the taxable wage base (an exogenous variable in most states but endogenous in states that index the taxable wage base) to average annual wages.

The determination of the effective tax rate on taxable wages is modeled in different ways in the individual states. The feedback from benefit outlays to taxes differs according to the state's method of experience rating. In reserve-ratio states, the fund balance (relative to covered payrolls) at a point in this year (often June 30th) influences the tax rates employers pay starting in January of the next year. Benefit-ratio states often use a three-year average of benefits (relative to covered payrolls) to set the next year's tax rates. Additionally, more than half the states supplement their regularly scheduled taxes with solvency taxes to be activated when the trust fund falls below some predetermined threshold.

Block 4 determines interest payments as the product of an exogenously determined interest rate and the average fund balance for the year. Block 5 has the elements of the state's trust fund identity. In an annual updating, the net sum of taxes plus interest minus benefits is added to last year's balance to arrive at the current end-of-year balance.

Simulations of Fund Adequacy

Simulations were conducted in seven large states: California, Florida, Massachusetts, Michigan, New Jersey, Ohio, and Texas. The starting point for the analysis was a baseline simulation in each state where the unemployment rate was stable at roughly the full-employment rate (5.5 percent) and wage inflation was stable at a moderate rate (6 percent per year). Two purposes were served by the baseline simulations. First, they showed the level that the trust fund balance would attain in the intermediate run under generally favorable economic conditions given the initial trust fund balance and the current (1988) tax and benefit statutes operative in the state. Second, they provide a background against which the changes in benefits, interest, taxes, and fund balances could be measured when the important control variables departed from their baseline levels. Each simulation covered the 10 years from 1988 to 1997.

The assumptions for the control variables in the baseline simulations were as follows: (1) The unemployment rate was 5.5 percent of the labor force. In three states where the 1987 unemployment rate was more than a full percentage point above 5.5 percent (Michigan, Ohio, and Texas), the rate in 1988 and 1989 was assumed to decline by about one percentage point per year until 5.5 percent was achieved. (2) The wage inflation rate was assumed to be 6 percent per year, a rate consistent with long-run historic experiences in UI programs. (3) The real interest rate was assumed to be one percent per year (or a 7 percent nominal interest rate on trust fund balances in the baseline). This real interest rate is less than the average for the 1980s but greater than the average for the 1970s. (4) Benefit availability in the regular UI and EB programs was assumed to be the same as in the 1980s, i.e., a downward shift from the 1970s in the availability of regular UI and the continued applicability of the present EB triggers. (5) Initial trust fund balances were those as of the end of 1987.

Table 1 shows selected results from the baseline simulations and simulations with alternative unemployment rates. From among the set of possible unemployment rates two time paths were selected, the state's actual unemployment rate from the 1970s (1970-1979) and from the 1980s (1979-1988). Note that in the baseline (Panel A) where average unemployment is reasonably low, no state borrows during 1988-1997 and six of seven (all but Massachusetts) accumulate nominal reserves. The 1988-1997 reserve accumulations in the baseline exceed the growth in covered wages for the same period in three states (Michigan, Ohio, and Texas) while reserves and covered wages grow at about the same rate in three states (New Jersey, Florida, and California). Thus, except for Massachusetts, the net reserve position of the states either improves or is roughly stable over the 10-year period.

The ending fund balances are generally smaller (vis-à-vis the baseline) when the states repeat their unemployment experiences of the 1970s (Panel B). The national TUR averaged 6.2 percent over the 10 years. Considerably higher average TURs were experienced by

TABLE 1
Simulations with Alternative Unemployment Rates

	Mass.	New Jersey	Michigan	Ohio	Florida	Texas	Calif.
			Panel A—Baseline Simulation				
Average TUR—percent	5.5	5.5	5.7	5.6	5.5	5.8	5.5
Loans—1988-1997	0	0	0	0	0	0	0
End of year fund balance							
1987	1097	1824	26	214	1745	−514	4017
1997	1058	4272	3540	3789	3648	1979	8735
Reserve ratio (% of payrolls)							
1987	1.96	2.65	0.04	0.29	2.38	−0.48	1.79
1997	0.99	3.16	2.55	2.53	2.12	0.72	1.77
			Panel B—State Unemployment Rates of the 1970s				
Average TUR—percent	7.2	7.2	7.9	6.1	6.5	4.8	7.9
Loans—1988-1997	789	0	808	0	0	0	0
Loans/1992 payroll percent	1.03	0.00	0.81	0.00	0.00	0.00	0.00
Fund balance—1997	312	1408	−359	2539	3547	2108	6435
			Panel C—State Unemployment Rates of the 1980s				
Average TUR—percent	5.1	6.3	10.8	8.8	6.4	6.7	7.3
Loans—1988-1997	0	0	4316	3953	0	466	0
Loans/1992 payroll percent	0.00	0.00	4.32	3.72	0.00	0.26	0.00
Fund balance—1997	1917	4438	−2210	−3119	3933	431	7709

Source: Simulations with UISIM. Loans and reserves measured in millions of dollars.
Note: TUR = Total unemployment rate.

four of the seven states and two (Massachusetts and Michigan) required loans of about $800 million apiece. In the 1980s when the national TUR averaged 7.2 percent, much higher rates were experienced by Michigan and Ohio (Panel C). Both states were simulated to need about $4 billion in loans. Texas also needs to borrow but on a much smaller scale. From these simulations with 1980s TURs, it is clear that the combined effects of low initial balances and very high TURs result in large-scale borrowing. This is precisely the pattern observed in many states in the early 1980s.

Table 1 also illustrates the contrasting regional patterns of high unemployment in the two decades. Generally, the coastal states fared worse than average (in terms of average TURs) in the 1970s while interior states had the highest unemployment in the 1980s. Massachusetts illustrates this pattern with an average TUR one percentage point above the national average in the 1970s (7.2 versus 6.2 percent) but 2.2 percentage points below the national average in the 1980s (5.1 versus 7.3 percent).

The preceding simulations illustrate at least three points: (1) There is a need in many states to build reserves if large-scale borrowing during a serious future recession is to be avoided; (2) The borrowing will take place even though benefit availability has been reduced in the 1980s and despite the presence of solvency taxes in six of the seven states (all but Massachusetts); and (3) The regional patterns of high unemployment and need for loans can vary considerably from one recession to the next.

The simulated patterns of borrowing indicated in Table 1 under a repetition of TURs from the 1970s and 1980s occurs in models that assume the benefit availability of the mid- to late-1980s continues into the future. Even larger loans would be needed if prior (pre-1981) availability of benefits is assumed. Specifically, when the IU-TU relationship of pre-1981 years is assumed, a given level of TU is associated with higher IU (and benefit outlays) than post-1981. Also the lower EB unemployment rate triggers of the pre-1981 period means that EB was easier to activate in earlier periods.

Under the assumptions about increased (i.e., pre-1981) availability of UI benefits, a repetition of the TURs from the 1970s and 1980s causes more borrowing than shown in Table 1. The simulations with TURs from the 1970s indicate that four states require loans, and total borrowing is $6,530 million compared to two states borrowing $1,597 million in Panel B of Table 1. A repetition of 1980s TURs with 1970s benefit availability causes four states to need loans totaling $12,965 million. This is about half again more than the $8,735 million of total borrowing shown for the three states in Panel C of Table 1. These simulation results indicate that the reduced benefit availability of the 1980s will cause a substantial reduction in the need for loans in a future recession.

Solvency taxes are present in six of the seven states (all but Massachusetts). Although provisions of the solvency taxes vary considerably from state to state, they share a common objective; to reduce or prevent borrowing when trust fund reserves are depleted. To assess the importance of solvency taxes, the simulations of Table 1 were rerun after removing the solvency tax equations from the models. The states needing loans in these simulations were the same as in Table 1 (except for Massachusetts which does not have a solvency tax).

The comparative levels of borrowing with and without solvency taxes were as follows: Michigan with 1970s TURs ($1,477 million versus $808 million in Table 1); Michigan with 1980s TURs ($4,604 million versus $4,316 million); Ohio with 1980s TURs ($5,296 million versus $3,953 million); and Texas with 1980s TURs ($849 million versus $466 million). One suggestion of these results is that solvency taxes do reduce the size of loans but do not act with enough strength to prevent insolvency in recessions. A second suggestion is that solvency taxes are less effective in reducing borrowing when the volume of borrowing is large (i.e., Michigan and Ohio under 1980s TURs).

Overall, these simulation models appear to be useful vehicles for examining several aspects of UI financing. The results should not be interpreted as unconditional predictions of future borrowing but rather as conditional predictions of future borrowing if no other discretionary tax increases or benefit reductions are enacted in a serious future recession.

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Endnotes

[1] The topics covered by this paper and several other aspects of UI financing are the subject of a forthcoming W.E. Upjohn Institute book.

[2] The estimate for the end-of-year balance in 1989 was made based on actual reserves at the end of September 1989 and projecting a seasonal reserve growth factor for the fourth quarter of the year.

Sex Discrimination in Pension Compensation

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In 1978 and again in 1983, the Supreme Court issued decisions that prohibit as discriminatory use of separate mortality tables for men and women by pension plans to determine contributions and benefits. Economists have analyzed the effects of such sex-based risk classification on efficiency and behavior (Crocker and Snow, 1986; Rea, 1987) while generally not analyzing discriminatory effects of such practice. This paper analyzes whether the application of this Civil Rights Act in those decisions alleviates economic discrimination against women, but does not address the legal basis of the Supreme Court's decisions.[1]

The Supreme Court's Unisex Pension Decisions

Before turning to the economic analysis, the Supreme Court's rulings are briefly delineated.[2] In ruling against the use of sex-based mortality tables by private pensions, the Supreme Court applied Section 703(a)(1) of the Civil Rights Act of 1964 which prohibits sex discrimination in compensation. The Supreme Court, in a split decision, ruled that a pension plan is guilty of discrimination in compensation if identically situated male and female retirees receive different annual pension benefits.

The Supreme Court accepted that as a group female pensioners outlive male pensioners, and thus with equal benefits females as a group receive greater lifetime benefits. The Court ruled, however, that the Civil Rights Act requires the equitable treatment of individuals rather than of groups. A characteristic that is empirically identifiable with one sex but that is empirically false for many individuals of that sex cannot be used by employers in determining compensation. The Court argued that sex-based mortality tables cause sex discrimination against women because it is not known with certainty that an individual woman will outlive an individual man.[3]

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Because the treatment of pensions as compensation is the key to the Supreme Court's application of the Civil Rights Act,[4] a key step in the analysis is to define pension compensation.

Pension Compensation

Compensation is employer remuneration to workers per unit of time worked. Pension compensation can be defined as the increase in pension wealth less the increase in pension wealth due to a shorter period of interest and mortality discounting. The increase in pension wealth due to the shorter period of discounting is not part of pension compensation since it would accrue regardless of whether the person continued working. By measuring pension compensation per year of work rather than per year of retirement, this definition achieves comparability between pension compensation and wage compensation. Annual benefits are rejected as a definition of pension compensation because they are not measured per unit of time worked.

To analyze discrimination, we assume away differences in variables such as earnings, tenure, retirement age, and pension plan that are major determinants of pension benefits. Though sex differences in these variables may be the result of sex discrimination, we assume away such differences to focus on the effects of differences in mortality risk. Within the analysis, expectations concerning mortality risk become the key determinant of pension compensation. There are two relevant perceptions of mortality risk—the pension plan's perception, as reflected in its choice of mortality table, and the individual's perception. To focus on these two perceptions of mortality risk, for the remainder of the analysis pension compensation will be written as:

(1) $$P = P(M_g, m_g)$$

Both M_g and m_g are vectors of probabilities for worker g of death on or before each exact age from a+1 to 100 given survival until exact age a. The plan's perception derived from its age- and sex-based mortality table is M_g; the worker's perception is m_g.

The remainder of the analysis focuses on determining the annuity policy that minimizes discrimination in pension compensation in light of this definition. Analysis is carried out for a defined contribution plan, which was the type of pension plan considered in the Supreme Court's 1983 (Norris) decision. These plans may offer a variety of options for distribution, but this paper focuses on the form of benefit which was the subject of the Norris decision, the single life annuity beginning at retirement. For simplicity, retirement at age 65 and full indexation of benefits for inflation are assumed.

Discrimination Against Individuals

Discrimination can be categorized as either individual discrimination or group discrimination (Aigner and Cain 1977). This section discusses individual discrimination in pension compensation while the following section discusses group discrimination. The analysis assumes that pension plans use actuarially fair pension benefit calculations, meaning that pension compensation is equal for a male 1 and a female f if their expected mortality probabilities equal their actuarial mortality probabilities.

Discrimination against individuals in pension compensation occurs if two or more workers who are identically situated (in ways discussed earlier) receive different levels of pension compensation. Dispersion in pension compensation within the group of identically situated workers is thus individual discrimination. The measure of dispersion that will be used is the mean absolute deviation of pension compensation from a benchmark. It would arbitrarily inflate the measure of individual discrimination to choose any benchmark other than the one which minimizes the sum of absolute deviations. For any distribution, the median has this statistical property (Spiegel, 1961, p. 70). Thus mean individual discrimination among a group of identically situated workers is defined as:

$$D = \text{mean}\ (\text{abs}(P(M_g,m_g) - \text{median}\ (P(M_g,m_g)))) \tag{2}$$

Since M_g is invariant for only one pension plan, the amount of individual discrimination within a plan is determined by dispersion in m_g, the workers' expectations of mortality risk.

Sex Discrimination

Sex Discrimination as Group Discrimination

For this analysis, group discrimination in pension compensation is defined as the difference in mean levels of pension compensation between groups with the same age, expected earnings, and service at retirement. Sex discrimination is group discrimination. Sex discrimination D_s against women in pension compensation is defined as occurring when, in pension plan k, the mean pension compensation differs for females and males of identical characteristics (i.e., $D_s = 0$).

$$(3) \qquad D_s = E_k\,[P(M^*(l),m_l) - P(M^*(f),m_f)]$$

where m_l and m_f represent the vectors of annual subjective mortality probabilities for individual males and females and where $M^*(l)$ and $M^*(f)$ represent vectors of actuarial mortality probabilities for males and females from an unspecified mortality table.

Unisex versus Sex-based Mortality Tables

Do unisex mortality tables alleviate sex discrimination in pension compensation? The question can now be addressed by comparing the average (mean) amount of sex discrimination, measured in dollars, for a plan using a unisex mortality table and for a plan using sex-based mortality tables.

To evaluate the amount of sex discrimination, it is necessary to evaluate the expected value of pension compensation. Since all variables affecting pension compensation except the individual's subjective mortality probabilities are held constant, the expected value of pension compensation depends on mortality probabilities.

An approximate property of the pension compensation function P is that the operator E_k can be moved inside P so that the expected value of pension compensation approximately equals pension compensation valued at the expected value of mortality risk (McCarthy and Turner, 1989).

$$(4) \qquad D_s \approx P(M^*(f),E_k(m_f)) - P(M^*(l), E_k\,(m_l))$$

This equation and the definition of an actuarially fair benefit calculation imply that for a sex-based mortality table, the mean amount of sex discrimination is approximately zero.

With a sex-based mortality table, pension benefits differ by sex, and individual discrimination against females and males occurs. Sex-based mortality tables, however, do not cause sex discrimination even when some males expect to outlive some females, because males and females as groups receive the same mean pension compensation. As individuals, both males and females with short life expectancies are discriminated against, but that result is not sex discrimination.

Evaluation of Alternative Risk Classification Policies

Risk classification policies can be evaluated by calculating their effects on discrimination. The effects of different risk classification policies are calculated for a hypothetical pension plan using the 1971 Group Annuity Mortality (GAM) table.

Risk classification policies are evaluated against three possible goals: (1) minimize sex discrimination, (2) minimize individual discrimination, or (3) minimize the difference between the annual benefits received by males and females. The second goal is suggested by the reasoning of the Supreme Court in its unisex pension decision which rejected the concept that the Civil Rights Act refers to the treatment of groups and instead chose the concept that discrimination against individuals is the legally prohibited activity. The last policy goal is included because it is effectively the policy chosen by the Supreme Court, but it does not measure discrimination in pension compensation since annual pension benefits measure retirement income rather than pension compensation.

Three risk classification policies are considered: (1) unisex benefits, (2) sex-based benefits with average (mean) lifetime pension compensation equal for males and females, and (3) sex-based benefits set so as to minimize individual discrimination in lifetime pension compensation. Equivalent work histories are assumed for males and females and comparisons are made for lifetime pension compensation (pension wealth) valued at the point of retirement.

As discussed earlier, individual discrimination arises from variation in workers' subjective mortality risk. In the absence of data on workers' perceptions of mortality risk, the assumption is made that each worker expects to die at his or her actual age of death and that deaths are distributed in exact accordance with the 1971 Group Annuity Mortality Table. This assumption of full mortality information by workers probably overstates the dispersion in workers' perception of mortality risk and magnitude of individual discrimination, but it results in no obvious distortion in the comparison of risk classification policies.

To standardize the comparisons, risk classification policies are compared for a pension plan holding constant the total lifetime pension compensation provided by the plan. Annual pension benefits are set at $100 for males in a sex-based pension (Policy 2) and pension benefits and pension wealth are calculated for other policies so that the constraint of constant total lifetime pension compensation is satisfied for the pension plan. A real interest rate of 2 percent is assumed. A graphical search technique was used to determine the policy that minimizes individual discrimination for various gender mixes. Results of these and other calculations that evaluate the three risk-classification policies are presented in Tables 1 and 2.

There are only minor differences in annual pension benefits

TABLE 1

Sex Discrimination in Pension Compensation—Gender Mix: 50% Men

	Annual Benefits[a]		Lifetime Pension Compensation		Discrimination Measure: Sex Discrimination		Discrimination Measure: Individual Discrimination		Discrimination Measure: Difference Between Male and Female Benefits	
Risk Classification	Male ($)	Female ($)	Male ($)	Female ($)	($)	(%)[b]	($)	(%)[c]	($)	(%)[d]
Unisex Policy	89.5	89.5	1121	1384	263	(23.5)	458.54	(40.9)	0[e]	(0)
Sex-based Policies										
Equalize present values	100.0	81.0	1252	1252	0[e]	(0)	449.98	(35.9)	19	(19)
Minimize individual discrimination	98.3	82.4	1231	1274	43	(3.5)	449.68[e]	(36.5)	15.9	(16.2)

Note: Assumes a 2 percent real interest rate.

[a] Normalized so that each policy costs the same to the pension plan. Annuities are assumed to begin at age 65.

[b] Percent by which lifetime pension compensation of females exceeds that for males.

[c] Percent of male lifetime pension compensation.

[d] Percent of male pension benefits.

[e] Column minimum.

TABLE 2

Sensitivity of Benefit Levels to Gender Mix in Pension Plan

		Sex-Based Benefits			
		Males		Females	
Percent male	Unisex Benefits	Equalize present values	Minimize individual discrimination	Equalize present values	Minimize individual discrimination
0	81.0	100.0	—	81.0	81.0
20	84.2	100.0	98.9	81.0	81.2
50	89.5	100.0	98.3	81.0	82.4
80	95.5	100.0	99.8	81.0	81.7
100	100.0	100.0	100.0	81.0	—

Note: Assumes a 2 percent real interest rate. Normalized so that each policy costs the same to the pension plan.

between the two sex-based policies. The largest difference, 1.7 percent, occurs when 50 percent of the workers are men. With a unisex pension policy, however, women's annual pension benefits range from zero to 23 percent higher than when sex-based mortality tables are used depending on the gender mix in the plan. The two sex-based policies cause little or no sex discrimination. The unisex policy, however, causes sex discrimination against males which is equal to 23.5 percent of male pension compensation regardless of the gender mix.

The policy of minimizing individual discrimination results in a level of individual discrimination that is less than 0.05 percent lower than for the policy of equating present values, regardless of the gender mix. Moreover, the policy of equating present values results in a level of individual discrimination as a percentage of male pension compensation that is the lowest of the three policies considered. Thus the traditional sex-based policy for practical purposes minimizes both sex discrimination and individual discrimination.

Conclusion

The Supreme Court argued correctly that sex-based mortality tables cause discrimination against females with high mortality risk. From an economic standpoint, the Supreme Court argued incorrectly that such discrimination is necessarily sex discrimination in compensation. Use of gender to determine pension benefits is not evidence of sex discrimination in compensation because pension benefits do not measure pension compensation.

Measuring pension compensation as the accrual of pension wealth, the use of actuarially fair sex-based mortality tables is required to prevent sex discrimination in compensation. Moreover, benefit levels determined by actuarially fair sex-based mortality tables are very close to the levels that minimize individual discrimination.

Reduction of the economic disparity between men and women in retirement is a public policy goal that may lead some analysts to favor unisex pensions. For the situation considered by the Supreme Court of pensioners choosing single life annuities, a unisex pension policy clearly furthers this goal. When consideration is broadened to include all types of annuity, it is not even clear that unisex pension policy furthers the goal of reducing economic disparity. Connerton (1983) found that male pensioners on net gain more from unisex pensions than do female pensioners. This unexpected consequence of the unisex pension decisions occurs because the benefits of male pensioners receiving joint and survivor benefits are increased since the benefit reduction for providing survivors benefits to their wives is lessened.

The Supreme Court has required employers to ignore recognized differences in the mortality risk of men and women in computing pension benefits, but it cannot require workers to ignore these differences in their personal valuation of the promise of these benefits. The disparity between the Court's mandate of sex blindness and the worker's knowledge of sex differences has been shown to exacerbate both sex discrimination and individual discrimination in pension compensation.

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Endnotes

[1] See Lautzenheiser (1976), King (1976), Key (1979), Benston (1982), Kulash (1983), Burkhauser (1984), and Connerton (1983) among others for previous discussions relating to the unisex pension decisions.

[2] These decisions are Los Angeles Department of Water and Power vs. Manhart, 435 U.S. 702 (1978) and Arizona Governing Committee vs. Norris, 51 U.S.L.W. 5243 (July 6, 1983).

[3] The mortality table most frequently used by pension actuaries is the 1971 Group Annuity Mortality Table (Turner and Beller, 1989). Computed from this table, the probability that a male aged 65 will outlive an equal age female is 36 percent.

[4] In the Norris decision, 51 U.S.L.W. 5243 (July 6, 1983) the Supreme Court stated "There is no question that the opportunity to participate in a deferred compensation plan is a 'condition or privilege of employment' and that retirement benefits are a form of 'compensation'."

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DISCUSSION

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The paper by McCarthy and Turner makes us think about what is discrimination and what is the purpose of pensions. Whether you think a sex-specific pension policy increases or decreases discrimination depends upon how you define discrimination and what you consider to be the purpose of pensions.

The conclusion of the McCarthy and Turner paper rests upon the definitions of economic discrimination put forth by Aigner and Cain (1977) in their paper on statistical discrimination. According to Aigner and Cain, individual discrimination is defined as unequal pay for equally productive workers; group discrimination occurs when the average wage of a group is not proportional to its average productivity. McCarthy and Turner use analogous definitions in their paper: individual discrimination occurs if two or more workers with the same age, earnings history, and service at retirement receive different levels of pension compensation; group discrimination occurs if there is a difference in the mean levels of pension compensation between similarly situated groups. Defining pension compensation as the expected present value of lifetime pension benefits accruing due to an additional year of work, McCarthy and Turner show that there is less individual and group (i.e., sex) discrimination with sex-specific pension plans than with pension policies that ignore sex differences in expected mortality.

The same reasoning could be used to justify race and sex-specific wages. Just as in the case of pensions where we know expected, but not actual mortality, employers must make their hiring and pay decisions on the basis of expected, not actual, productivity. In a world of imperfect information with which to assess the expected productivity of each individual, wage decisions based on group averages could result in less individual and group discrimination than

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wage decisions that ignore group averages. For instance, if blacks are on average less productive than whites because of poorer quality schooling or other factors then, in the absence of individual information, individual and group discrimination under the Aigner and Cain definition would be minimized by paying blacks and whites wages commensurate with their average productivities.

Other group identities could be used, and are used, in making wage and employment decisions. For instance, statistical discrimination is routinely practiced using years of schooling and years of experience as indicators of expected productivity even though these variables only imperfectly relate information concerning the productivity of individuals. Why then do we find statistical discrimination based on race and sex unacceptable? Two interrelated reasons come to mind. First, variables such as years of schooling and years of experience are at least somewhat under the control of the individual; even if such variables provide inaccurate information about productivity, an individual still has the opportunity to improve his or her status. Secondly, allowing employers to make employment decisions on the basis of immutable characteristics such as race and sex will surely have a devastating effect on the extent to which individuals invest in human capital.

The central point is that the decision as to whether statistical discrimination should be permitted depends upon a larger social context; it cannot be made on the basis of whether it diminishes individual and group economic discrimination. Similarly, the sex-specific pension plan advocated by McCarthy and Turner must be viewed in a larger social context, and this is where society's view of the purpose of pensions becomes important.

If the purpose of pensions is to insure a certain standard of living to individuals in their retirement proportional to their contribution to the firm, then a policy that uses differential mortality by sex is discriminatory since such a policy guarantees that women retirees will have a lower standard of living during retirement than their male colleagues. If, on the other hand, we view pensions as an investment by individuals, then taking into account sex differences in expected mortality seems appropriate, and we may even want to consider taking into account other group differences in expected mortality as well. For instance, low earners have higher mortality than high earners, and this differential appears to be constant over time (Duleep, 1989; 1986). If pension plans take into account the lower life expectancies of men, shouldn't they also take into account the lower life expectancies of low earners? Hopefully, these and other questions will be explored by McCarthy and Turner in a future paper.

Acknowledgments

These comments benefitted from discussion with Mark Regets. They reflect the views of the author and should not be attributed to the U.S. Commission on Civil Rights.

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VII. DISSERTATIONS: WORK REORGANIZATION

The Politics of Work Reorganization: Partnership and Conflict in the U.S. and West German Auto Industries

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One of the characteristics of the era in which we now live is the ongoing and sometimes dramatic reorganization of work in offices, shops, and factories. Industry specialists, consultants, researchers, and top managers in every advanced industrial society call for new technologies, new flexibility in the process and product of production, new human relations, new systems of motivation and control, new job structures and training programs—in short, a thoroughly reorganized workplace, one better equipped to respond to the anticipated demands of intensely competitive world markets in the last decade of the twentieth century and beyond. The trouble is that work reorganization is more easily designed or urged than done; in addition to technical, financial, and other constraints, implementation comes squarely up against political problems as reorganization challenges vested interests, traditions, and ways of thinking and doing (Slichter et al., 1960 and Sorge and Streek, 1987). Conflicts and negotiations that precede, or result from, attempts to reorganize can be termed the politics of work reorganization, and that is the subject matter of this study.

Especially where unions and works councils exist to give organized expression to worker interests, conflicts and negotiations are most

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intense. And the effect of work reorganization initiatives on union and works council roles and influence is often as dramatic as the effect on jobs and working lives. What I aim to explain here is the stability and extent of worker interest representation in the contemporary period of intense work reorganization.

As primary evidence, the recent politics of work reorganization in the U.S. and West German auto industries is examined. Secondary evidence from the telephone services and apparel industries in the U.S. and West Germany is also considered, as well as evidence from other countries (Britain, Sweden, Italy, and Japan), to round out the analysis and draw out some general hypotheses regarding industrial relations in the current era of work reorganization.

Findings for the two primary cases are summarized as follows: The period since 1982 has been characterized by major managerial initiatives at work reorganization in the *U.S. auto industry*, in the face of persistent and successful Japanese competition. Most evident, and perhaps most important as well, have been conflicts and negotiations around the introduction of various forms of team or group work in many large U.S. auto plants (Katz, 1985). Managerial initiatives and union/work force responses have resulted in a wide range of outcomes from new nonunion plants, to plants with conflictual and still traditional industrial relations, to plants with traditional but more cooperative industrial relations, and finally, to plants in which team organization is accompanied by an integration of the union into new levels of managerial decision making. The latter cases offer variants on a new model for the U.S. auto industry, in which more cooperative labor-management relations are combined with a more flexible deployment of labor in teams or groups and a union actively engaged in processes of managerial decision making. Although there are plant-level cases of success for such a model (at GM's Plant No. 1 in Lansing, Michigan, and at the NUMMI plant in Fremont, California, for example, both of which are examined in this study), the pattern all too often includes heavy (and often counterproductive) managerial challenges to union influence and union concessions of traditional bases of power, accompanied by labor-management and intra-union/work force conflict and a rocky, uneven road to work reorganization. Because the U.S. labor movement is fragmented and has declined markedly in strength and numbers and because the UAW has no entrenched position within processes of managerial decision making, managers in the auto industry have wide discretion in their strategies for the implementation of new work organization—and it is precisely this wide discretion that best accounts for the remarkably wide range of current industrial relations outcomes in the U.S. auto industry. While market circumstances cry out for a new plant-level model of organization, the successful spread of such a model is undermined mainly by persistent old-fashioned managerial thinking and practice (including authoritarian shop floor approaches).[1] Union membership in the auto industry has declined since 1979 both absolutely and as a percentage of the industry organized.[2] Not coincidentally, I would suggest, the U.S. auto industry taken as a whole (and this is especially true for the dominant firm, GM) has adapted only slowly to the major competitive challenges from Japan and elsewhere.

In the *West German auto industry*, work reorganization has proceeded steadily in the past decade, and although management initiative has dominated, the outcomes have resulted from a process of negotiation between company "rationalization" drives and union/works council "humanization of work" demands (Jürgens et al., 1989 and Thelen, 1987). Labor-management relations have been fairly stable; union and works council influence is stable in the plants; and works councils have a voice at various levels of firm decision making and engage in a daily process of negotiation regarding the allocation of manpower. Union membership in the industry is stable, both absolutely and as a percentage of the industry work force, and nonunionism is a non-option in the West German auto industry. New forms of team and group work are now looming rapidly on the horizon, over groundwork laid by the gradual introduction of quality circles and group work (*Gruppenarbeit*) pilot projects in several plants. The entrenched position of the works council in the plants and the projection of an independent union vision of the nature of group work means that teamwork is coming to the West German auto industry in a very different way than in the U.S. Here it is primarily the IG Metall, with its own independently developed, detailed concepts and strategies for new work organization that has promoted group work, and only since about 1985 has management begun to press for its own new concept, a more Japanese-style team approach. Teamwork is coming to the West German auto industry in the negotiation between these two strong and contending views. Variations within the relatively narrow range of outcomes can be best accounted for by varying firm strategies (based on differing firm characteristics, such as the position of Ford-Werke and Opel as part of Ford-Europe and GM-Europe, and the unique history of VW) and varying works council strategies (a product, for example, of *Geschlossenheit* or unity at VW, compared to the existence of contending factions at Opel Bochum), but the differences across plants and firms arc small compared to the U.S. Both the smallness of the range and the stable influence of union and works councils are best explained by the entrenched position of works councils within the plants and the cohesiveness of the West German labor movement, in which the IG Metall retains a central position. Within this institutional framework, the West German auto industry has so far adapted very well to increasingly competitive market circumstances at home and abroad (Streek, 1989).

This analysis should not be interpreted either as belittling the very real accomplishments of the UAW in the 1980s or as overlooking the intractable and growing problems faced by the IG Metall. The UAW remains a pattern-setter and innovator for the U.S. labor movement, and if a new U.S. model of industrial relations emerges that promotes both market success and new union vitality it may well come out of the sea of labor-management experiments currently underway in the auto industry. At the same time, the IG Metall faces high and enduring unemployment in West Germany as well as new managerial aggressiveness in issues such as flexibility of working hours and work reorganization. A shift in the locus of influence to the works councils has arguably contributed to a new "plant syndicalism" (Hohn 1988), which has made it possible for West German managers to begin to learn the art (well-developed at U.S. auto firms) of playing one plant's work force off against another.

But the cross-national outcomes do contrast rather sharply, and these differences make clear the very real constraints faced by the UAW—regardless of leadership decisions or strategy. In the U.S. industrial relations climate of the 1980s, in fact, the UAW efforts may be a "best-case" scenario. This is clear from a brief look at the telephone services and apparel industries, which together bring out well the broad (as opposed to industry- or firm-specific) nature of the U.S.-West German contrast. Space does not permit a full recounting here, but in both cases, the patterns are similar: West German unions gain membership in the face of organizational reform efforts (telephone services) or adverse market circumstances (apparel) and hold on to important levers of influence; U.S. unions face declining membership and struggle to replace lost influence in new ways (Silvia, 1987). Parallel contrasts between the U.S. and West Germany can be seen across a range of industries regardless of market circumstances or firm or union structure.

The argument suggested by an analysis of these findings can be summarized as follows. Contrasting U.S. and West German industrial relations outcomes in the 1980s are not primarily the result of cultural differences (including managerial attitudes), contrasting market circumstances (such as severity of the market challenge), industry structure, variations in national economic performance, craft versus industrial unionism, or historically developed differences in the way work is organized to begin with (such as flexible labor deployment in West Germany compared to job-control unionism in the U.S.). To be sure, there is a close relationship between market circumstances and industrial relations performance. But it may well be that characteristics of an industrial relations system have more of an impact on market success than vice versa. More than one analyst, for example, has located a major source of Japanese market success in the system of enterprise unionism and accompanying work organization (cf. Dohse et al., 1985).

Rather, the key to an explanation for contrasting industrial relations outcomes lies in the *way* interest representation is institutionalized. The critical differences between the U.S. and West German cases, which explain the contrasting outcomes, are (1) codetermination versus arm's-length unionism and (2) a cohesive versus a fragmented labor movement.[3]

With the benefit of a broader comparative analysis (drawing on evidence from Britain, Italy, Sweden, and Japan), this argument can be generalized and focused on the changing position of worker interest representation, using the following hypotheses:

(1) Where unions and/or works councils are integrated into managerial decision making, based either on long-standing rules and traditions as in West Germany and Japan or on newer legal and political arrangements as in Sweden, worker interest representation remains stable in the recent period of major work reorganization.

(2) Everywhere else, where unions have arm's-length, adversarial traditions of various kinds, as in the U.S., Britain, France, and Italy, organized labor has experienced declining influence in the 1980s.

There are two important corollaries to the first hypothesis:

(1a) Where unions are integrated into firm decision making *and* operate as part of a relatively cohesive labor movement (as in West Germany and Sweden), union and works council influence remains significant from a base that is substantially independent of management.

(1b) Where union integration into firm decision making is combined with a highly decentralized or fragmented labor movement, as in Japan, union voice has no platform from which to be substantially independent of management. Although not the same thing, the outcome continues to look very much like "company unionism."

And the second hypothesis also has a corollary:

(2a) In these cases, organized workers are neither integrated into managerial decision making nor are they part of a cohesive labor movement. In France and Italy, organized labor is politically fragmented into contending federations; in the U.S. and Britain, unitary federations are highly decentralized. In all of these cases, labor has no society-wide leverage from which to negotiate for integration into firm decision making—as Swedish unions have done in the 1970s and 1980s. Union integration that does occur at the plant and firm level is often a result of managerial prodding and major union concessions, thus raising the specter of enterprise unionism.

A final thesis leads into the implications of this analysis:

(3) In the current period of intense international competition, necessary managerial initiatives to reorganize work require either the exclusion (or marginalization) of unions or the integration of unions and works councils into firm decision making.

This is true because the high levels of flexibility, productivity, and product quality (exemplified by Japanese industrial performance) necessary to compete successfully in today's markets can be achieved only by a thoroughly dominated or by an engaged work force—and where unions and/or works councils are entrenched, a work force can only be engaged if the institutions of representation are also engaged (Marshall, 1987). But integration of interest representation can happen in a variety of ways, as demonstrated by institutional contrasts between West Germany, Sweden, and Japan. Where this integration (either management-led as in Japan or union-led as in Sweden and West Germany) does not happen, however, as in most cases in the U.S., Britain, France, and Italy, unions decline in the 1980s and the road to "new industrial relations" is rocky and conflictual. Outcomes remain uncertain in these countries, as labor is battered at the same time as some managers and unionists grope toward new models of labor-management cooperation and toward plant-level "productivity coalitions."

Thus current debates about the fate of unionism in West Germany and the U.S. have a very real basis. If unions face the prospect (and to some degree the choice) of exclusion or integration, the latter is certainly preferable. But there are very different ways in which labor can be integrated. One way, enterprise unionism, means the subordination of union influence and also appears to mean intense shop floor pressure to work faster and harder; the other way, based on independent unionism, means a new and broader scope for worker representation at the plant level. The critical problem for unions in countries with fragmented labor movements (such as the U.S., Britain, France, and Italy) is that the second way has so far only emerged as a general pattern in countries with more cohesive labor movements. Unionists in the U.S., Britain, France, and Italy, therefore, are quite right to have reservations about new cooperation proposed by firms—but if enterprise unionism threatens as an outcome, the empirical alternative to greater integration so far appears to be continued decline and/or exclusion.

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Endnotes

[1] The primary problem, I would argue, is not job-control unionism (Katz and Sabel, 1985). At plant after plant, workers (usually under pressure) have proven willing to give up job classifications in return for promises of new participation—only to return from training programs to the shop floor where their raised expectations are dashed by "old-fashioned" managerial ways (cf. Milkman and Pullman, 1988; Turner, 1988).

[2] The organization rate decline has two sources; the nonunion Japanese transplants and the declining rate of organization in the parts-supplier branch of the industry.

[3] This is not to say that the strategic choices made by key actors such as unions and firms are unimportant (cf. Kochan, Katz, and McKersie 1986). On the contrary, institutional constraints often leave substantial room for discretionary decision making, and the case studies show that discretionary strategic choice accounts for much of the variation in outcomes *within* each country. But cross-national variations in the general patterns, it is argued here, are best explained by contrasting national institutional arrangements—and the possibilities or limitations these arrangements offer to key actors.

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Two-Tier Collective Bargaining Agreements and Firm Performance

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During the 1980s two-tier wage provisions appeared in a large number of collective bargaining agreements as managers, forced by the pressures of deregulation, product market competition, recession, and structural change within industry, struggled to cut labor costs and remain competitive. Despite the relative frequency of two-tier plans (defined as wage provisions in which new hires are paid at lower rates than senior workers in essentially equal jobs) surprisingly little is known about the impact of this type of collective bargaining outcome on organizational performance. This void occurs despite the generally accepted principle that managerial decisions regarding human resource policies have dramatic effects on firm performance, and that such decisions should be evaluated on the basis of their impact (Kleiner, McLean, and Dreher, 1988).

The conventional wisdom is that two-tier agreements and other types of labor concessions allow the firm to remain more competitive by lowering the wage bill. However, numerous articles have appeared in the popular press that warn about the potential adverse effects of two-tier agreements on the industrial relations climate, employee morale, labor productivity, and union solidarity. This dissertation reflects some of these concerns by suggesting that wage bill savings may not translate directly into labor cost savings if reduced cooperation of labor results in lower productivity. Using the market response to the announcement of a two-tier collective bargaining agreement as an indicator of the value of such an outcome to the firm, the model posits that under certain circumstances the market may perceive that increased turnover and reduced effort may lower productivity to such an extent that the wage bill savings resulting from a two-tier plan are compromised. The extent to which the capital markets value the relative impact of the expected wage bill savings

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resulting from the two-tier wage provision over the expected costs of reduced labor cooperation is an empirical issue which remains largely unexplored.

Efficiency Wage Models and Two-Tier Bargaining

Efficiency wage models, previously used to describe why firms fail to cut wages in the presence of involuntary unemployment (Yellen, 1984) and to explain the existence of wage differentials (Groshen, 1987), are used in this dissertation to model how wage reduction through a two-tier wage agreement may end up lowering productivity and actually increasing labor costs. Stiglitz (1987) states that scholars have long-recognized the relationship between wages and productivity. Low wages do not attract efficient employees. This negative effect on the firm is related to both incentive and selection effects of wages as well as to the behavioral responses of employees to perceived inequity.

The efficiency wage model posits that labor productivity depends on the real wage and that there is an "efficiency wage" that minimizes per unit labor costs. Therefore, lowering wage rates may result in greater labor costs if productivity falls as well (Yellen, 1984). The efficiency wage model suggests that if the firm believes that the unemployed individuals who offer their services at lower wages are less productive, the firm may have no incentive to lower wages (Stiglitz, 1987). The reasons advanced for the increased organizational performance associated with higher wages under the efficiency wage hypothesis include reduced monitoring or shirking costs, reduced costs of turnover, selection effects including the enhanced ability to attract good employees, sociological exchange in terms of increased work effort, and individual perceptions of internal equity.

Methods and Results

In this dissertation, I argue that the value of a two-tier wage agreement is determined by its impact on firm performance, and, following Becker and Olson (1987), that the most conceptually sound measure of firm performance is changes in shareholder equity values. Changes in equity prices represent unbiased estimates of the value of changing cash flows (Schwert, 1981). Under the efficient market hypothesis, unanticipated events that are perceived by the capital markets as altering future cash flows are rapidly reflected in changing equity values. The changes in shareholder equity represent the net present value of the event.

This investigation uses an important methodological approach within financial economics known as an "event study" to test if equity values for a particular firm are affected by the presence of a two-tier wage agreement. The empirical hypothesis is ambiguous in light of the conflicting testimony concerning the net effect of the two-tier plan. If managers are acting in their capacity as the agent of shareholders, the decision to engage in two-tier bargaining is a rational act designed to enhance the value of the firm. If, by contrast, the announcement of a two-tier agreement results in lower equity values, negotiating such a provision would appear to be neither of value to the markets nor of economic benefit to the firm.

This event methodology uses daily stock return data to compare actual returns to shareholders with what those returns would have been in the absence of the event. The predicted returns to the firm given no two-tier wage agreement are estimated using the "market model" developed by Sharpe (1964) and described in detail in Fama (1976). This basic model posits that returns on shareholder equity covary with the market return. Thus, expected returns to investors in individual firms can be estimated given the equity's historical level of systematic risk (covariance with the market, the stock's "beta") and changes in market returns. The value of the event (in this case the announcement of a two-tier wage agreement) is the difference between these predicted returns on equity and the actual daily returns, and it is equivalent to the value of the regression residuals. These "prediction errors" or "excess returns" are subject to statistical tests of significance to determine if the capital markets place inordinate value on two-tier bargaining.

Because collective bargaining outcomes may be anticipated before the actual event is announced, prediction errors are summed over a number of days surrounding the announcement of the settlement. The statistical tests are based on these cumulative average returns (CARs). As an additional control, CARs for a sample of conventional contracts over the same time period are estimated.

The results show that the announcement of a two-tier wage agreement is associated with a positive and significant ($p = .05$) 3.6 percent excess return on equity over a period occurring 30 days before and after the announcement of the settlement and a marginally significant return ($p = .10$) of 1.7 percent over the period 10 days before and after the settlement date. By comparison, the CARs for the sample of firms which did not negotiate a two-tier labor contract are negative, but not significantly different from zero, for the entire event period. The CARs of the two-tier firms begin a steady 50-day climb at six days before the settlement date which culminates 43 days after settlement with a risk-adjusted, 3.6 percent increase in shareholder equity (significant at the .01 level). This increase, arguably the best measure of the two-tier impact, suggests that the capital markets place a significant value on this type of concessionary wage plan. By contrast, the non two-tier firms' CARs steadily decrease from Day −6 to a low on Day 32, which represents a loss in equity values of nearly 2.0 percent (this loss is not, however, statistically significant).

An additional finding is that there is considerable variation in both the magnitude and direction of the two-tier effect across firms. This finding is addressed by examining the relationship between the firm-specific cumulative excess returns (CERs) and a host of economic, firm-specific, and industry characteristics. These variables include the variability of firm-specific returns as a test for informational asymmetry (Becker, 1987), the proportion of the firm's employees in the bargaining unit, industrial unemployment rates, industry wage levels, labor productivity, and the inclusion of other concessionary non two-tier provisions in the contract.

The regression results, testing many of the implications of efficiency wage arguments, simple bargaining models, and stylized fact, explain much of the variation in excess returns, particularly during time periods close to the announcement of the settlement. Most of this variation in excess returns is explained by differences in the variability of firm-specific returns, relative bargaining unit size, and labor intensity.

Discussion and Conclusions

Two-tier bargaining, on average, is shown to add value to the firm in the sense that firms which negotiate a two-tier plan have significantly greater CARs than firms which do not negotiate such an agreement. On the other hand, positive excess returns do not appear for all (or even most) of the two-tier firms. The evidence shows that negotiating a two-tier contract is more likely to enhance a firm's value if uncertainty regarding future profitability is great, if proportional unit size is small, if labor productivity is high, or if that firm can negotiate other concessionary items along with the two-tier contract.

This investigation suggests that the positive returns following two-tier bargaining reflect a redistribution from labor to shareholders. However, the results are not entirely at odds with the propositions put forth in the efficiency wage model. While two-tier contracts, on average, result in enhanced equity values, that result is far from universal and the magnitude of the effect is not particularly large. The value of a two-tier bargain is contingent on a number of firm-level characteristics which serve to moderate the impact of the two-tier wage plan.

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Interorganizational Relationships Among U.S. Labor Unions: Mergers and Affiliations

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Individuals within the AFL-CIO have expressed a need for mergers to take place among unions whose members share a community of interest. It seems not all union leaders are amenable to the idea of merging with another organization, however, despite the encouragement to do so. Therefore, an interesting question is why some union leaders consciously choose to pursue such action.

Affiliations, in contrast, have received little attention from the AFL-CIO. Although some AFL-CIO unions are strategically choosing to initiate such relationships (Baker, 1987; Foreman, 1987; Reinold, 1987), their existence is undocumented. A parallel question to the one above is why various union leaders are choosing to pursue affiliations while others are not.

This dissertation addressed these questions by exploring mergers and affiliations to determine why union leaders choose to engage in such action.

Merger/Affiliation Overview

A merger involves complete integration of two or more unions. During the merger process, the organization(s) take on a new name and identity, and all assets and liabilities are combined. Typically the officers of the smaller union(s) forfeit their positions of leadership. Often in mergers the larger union involved takes on a dominant role, acting as the "parent" organization in the relationship, while the smaller assumes a "mergee" role.

Affiliations occur with the signing of a contract between an international parent union and a smaller, independent, geographically contained union. The affiliate agrees to pay a certain amount per capita to the parent union in exchange for services or assistance in

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areas such as bargaining, organizing, research, and political action. The affiliate retains its name and identity, simply adding the parent union name at the end. All assets remain in the possession of the affiliate, and the officers retain their leadership positions.

Why union leaders choose to merge or affiliate is uncertain and seems to be situationally unique. According to international union officers, however, mergers are frequently rescue operations and occur when one union is experiencing hardships (Cohen, 1987; Earls, 1987; Hamilton, 1987), while affiliations are effected for reasons that range anywhere from gaining a foothold in a new jurisdiction to trying to increase membership numbers (Baker, 1987; Reinold, 1987).

Strategic Choice

One commonality of the two phenomena seems to be that both are a strategic choice on the part of the parent union leaders. Typically, a merger or an affiliation mandates a change in the union's strategy. In a merger, the parent union is usually a viable organization, unlike the mergee, which may be merging to survive (Zalusky, 1987). Therefore, the officers and members of the parent union have a choice as to whether or not to enter into a relationship. Narrowing the question posed previously, a more interesting inquiry is why the leaders of a prosperous union choose to allow a declining organization to become part of their operation. Therefore, this dissertation focused on the more interesting aspect of parent union merger strategic choice.

The parent union in an affiliation also does not need to enter into the relationship to remain an effective organization. While an affiliation is less complex than a merger, the parent union must still exert extra effort in effecting the action. Therefore, there must be some compelling reason for a parent union to choose to expend the resources required to join forces with another organization. This dissertation proposed that leaders of a parent union engage in a merger or an affiliation because they believe organizational growth, power, and strategic capability and their self-interests are enhanced.

Union Growth

For unions, the most valuable resources are human or organizational members. From members come other resources such as financial funds through payment of dues. Throughout the past 30 years, however, many unions have experienced membership decline (Freeman, 1985; Troy, 1986). One means to counteract decline may be through effecting a merger or affiliation with another union.

An ancillary means of growth may be created if the uniting unions represent employees in dissimilar jurisdictions. The parent union may view the arrangement as a diversification, boundary expansion mechanism, or as a domain creation strategy (Miles and Cameron, 1982). By taking on the dissimilar organization, the parent union gains legitimacy in a new jurisdiction.

Union Power

More members in a union may translate into more power for the parent union in bargaining, organizing, and political terms. Organizing power is enhanced if the union gains a foothold in a new jurisdiction or if it is able to demonstrate it successfully represents a large number of employees in its own jurisdiction.

Bargaining power may increase if a union is able to gain a greater monopoly advantage by representing all of the employees eligible to work for the employers with whom it bargains. Additionally, if unions representing workers in the same industry join forces, they may be able to negotiate as a team, thus gaining more leverage, and employers are unable to play one union off another (Foreman, 1987).

The parent union may also gain political clout. The number of professional lobbyists retained by unions has increased significantly since 1978, and union political action committee contributions to federal candidates have increased substantially (Masters and Delaney, 1987). More members translates into more finances, thus allowing a union to support more political activities.

Strategic Capability

Strategic capability is the sharing of knowledge, skills, resources, and ways of managing with another organization (Jemison, 1986). The joining of two organizations should result in a greater degree of strategic capability as they share their assets. A parent union may gain a larger pool of members from which to draw capable staff, an expertise in work-related issues such as safety and health, or knowledge of a new craft or jurisdiction.

Leader Self-Interest

Self-interest of the leaders typically motivates them to strengthen the organization which gives them a position (Williamson, 1964). Choosing to merge or affiliate may allow leaders to strengthen their union while maximizing their own gains, even when acting in an official capacity. Consequently, while choosing a strategy that best serves the members, the leaders will likely be influenced by the projected impact of the choice on their own future existence.

Research Propositions

The above discussion leads to the following two propositions:

Proposition One

Pursuit of a merger is a strategic choice by parent union leaders who believe union growth, power, and strategic capability and their own self-interests are enhanced by such action.

Proposition Two

Pursuit of an affiliation is a strategic choice by parent union leaders who believe union growth, power, and strategic capability, and their own self-interests are enhanced by such action.

While mergers and affiliations are two distinct types of relationship, it seems parent union leaders may choose to effect such action for parallel reasons. The intent of these two propositions is to test this by comparing leader perceptions as to the benefits of engaging in each type of relationship.

Method and Sample

A survey approach was used in order to gather national data. The sample consisted of the total population of unions, both independent and AFL-CIO-affiliated. Initially, the president of each organization was asked to provide the name of the most appropriate person in the union to receive a survey about mergers and affiliations. As a result, a total of 205 surveys was distributed. Of those, 130 surveys were returned, resulting in a response rate of 63 percent.

Procedures, Measures and Data Analysis

The survey instrument gathered information in terms of: (1) strategic choice, indicated by resources devoted to the pursuit of each type of relationship; and (2) perceptions of benefits of engaging in mergers or affiliations.

The dependent variable was strategic choice on the part of the parent union to enter into a merger or an affiliation. Since strategic choice involves the allocation of resources for carrying out goals, choice was measured through on a scale of 1 (no resources) to 5 (substantial resources) as to the amount of effort and resources a union devoted to pursuing such action.

Perceptual measures were used for the independent variables of growth, power, strategic capability, and self-interest. Respondents were instructed to rate each item on a 5-point scale (5 = strongly agree; 1 = strongly disagree).

Analysis of the data used factor analysis to construct the independent variable composite scales. Although items had been chosen which were thought to represent the constructs, they were submitted to factor analysis to determine if they were representative. A principal factoring method with iteration estimates of communality and orthogonal rotation was used for the analysis. Factors with an eigenvalue > 1 were retained, and as a result five terminal factors that explained 63.9 percent of the total variance were produced. Table 1 presents the rotated factor matrix.

TABLE 1
Rotated Factor Matrix for Merger/Affiliation Perceptions
(N = 130)

Sources	Factors				
	1	2	3	4	5
Power					
To gain strike power	**.41**	.21	−.04	.11	.23
To gain bargaining power	**.77**	.15	−.01	.07	−.00
To increase political clout	**.87**	.16	−.03	−.02	.12
To gain lobbying power	**.54**	.33	.07	.23	−.06
To gain financial power	**.54**	.12	.09	−.02	.33
Strategic Capability					
Better management system	.20	**.70**	−.03	.07	−.06
To exchange skills	.09	**.58**	−.07	.02	−.00
To exchange services	.23	**.68**	.03	.20	.11
Status/Salary (Self-Interest)					
To increase leader salary	−.17	−.04	**.37**	−.27	.18
To increase leader status	−.06	−.08	**.89**	.13	−.02
To increase leader prestige	−.15	.04	**.44**	−.04	.19
Growth					
New jurisdiction/expansion	−.09	−.05	.02	**.51**	.16
To achieve growth	.26	.29	−.10	**.53**	−.03
To gain resources	.16	.49	.02	**.53**	−.03
Job Security/Professional Expertise (Self-Interest)					
Leader own welfare	−.27	−.32	.30	−.18	**.42**
Leader future role	.17	−.20	.26	.11	**.56**
Job Effectiveness	.19	.21	.02	.21	**.42**
Eigenvalue	4.37	2.34	1.50	1.35	1.06
Percent of Explained Variance	48.30	22.50	13.30	9.00	7.00

Five composite scales were then developed to represent the independent variables of the research. For growth, the scale consisted of items addressing expansion into new jurisdiction, achieving growth and gain in resources. The power scale included items on strike, bargaining, political, lobbying, and financial power. The strategic capability scale consisted of items addressing better management system, exchange of skills, and exchange of services. Two composite scales emerged for self-interest. The first represented status/salary and included leader salary, status, and prestige. The second represented job security/professional expertise and consisted of leader welfare, leader future role, and job effectiveness.

Ordinary linear multiple regression analyses were conducted next, using the following regression models for each proposition:

Proposition One

Strategic Choice of Merger = a + B_1Growth + B_2Power + B_3Strategic Capability + B_4Status/Salary + B_5Security/Expertise.

Proposition Two

Strategic Choice of Affiliation = a + B_1Growth + B_2Power + B_3Strategic Capability + B_4Status/Salary + B_5Security/Expertise.

Results

The results of the OLS regression analyses are presented in Table 2.

As indicated, the results for the strategic choice to devote resources to effecting mergers revealed that strategic capability was the only highly significant perceived benefit, while status/salary yielded a significant negative relationship. For affiliations, power emerged as the only significant benefit.

Discussion

The results seem to indicate that union leaders who choose to enter into a merger believe it results in strategic capability gains, while the perception of affiliations is that they lead to an increase in power. One possible reason for the divergence in these results is the difference in each type of relationship. Mergers are usually rescue operations. Union leaders may see a merger as taking on more of a burden, for example, through absorbing the other union's liabilities and not view it as a growth or power strategy. However, it is more likely that strategic capability gains will be realized, especially if they merge with unions in differing jurisdictions.

Affiliations, on the other hand, are highly sought after by some unions and usually occur between an AFL-CIO union and an

TABLE 2

Results of Multiple Regression of Strategic Choice of Merger ($N=130$)

Merger Benefits	Resource Betas	Std Error	Change in R^2	F
Growth	.051	.175	.03	.086
Power	.046	.202	.09	.521
Strategic capability	.618	.187	.08	10.976***
Status/salary	−.404	.176	.01	5.285*
Security/expertise	.163	.187	.00	.764
Constant	.449			
Adjusted R^2	.177			
Overall F	5.973***			

Results of Multiple Regression of Strategic Choice of Affiliation ($N=130$)

Affiliation Benefits	Resource Betas	Std Error	Change in R^2	F
Growth	.086	.163	.00	.279
Power	.393	.188	.09	4.361*
Strategic capability	.244	.174	.02	1.967
Status/salary	−.404	.176	.01	.681
Security/expertise	−.106	.174	.01	.367
Constant	1.013			
Adjusted R^2	.084			
Overall F	3.154*			

* $p < .05$
** $p < .01$
*** $p < .001$

independent union operating in the same jurisdiction. By joining together, the organizations may gain more power in terms of negotiations, organizing, and political influence.

It is uncertain why growth did not emerge as a significant variable in either research equation. Perhaps union leaders only view growth as an outcome of organizing new, nonunion employee groups rather than through joining with another union. It is also possible that union leaders do not strategically choose to merge or affiliate in order to grow, but that it is an unintended consequence.

Leader self-interest was significantly negative for mergers, which is an unexpected finding. It may be that leaders do not view the rescue of a faltering organization to be in their own self-interest. They are taking on a burden which might require extensive effort on their part.

Another reason for the self-interest results could be that union leaders are quite sensitive to any topics surrounding self-interest because of the bad publicity which has emerged of late.

One implication of the research is that mergers may spawn strategic capability, while affiliations may add to a union's power base. Consequently, the strategic choice to implement a merger or an affiliation should serve to strengthen individual organizations. If labor unions continue on a downward trend, the frequency of mergers and affiliations is likely to increase.

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DISCUSSION

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The three dissertations presented today represent important and diverse contributions to the field. In my comments, I attempt to identify the unique aspects, as well as raise questions or possible extensions of each study.

Stratton-Devine's work on union mergers and affiliations makes several contributions to industrial relations research. First, it represents one of the first applications of "strategic choice" theory to union organizations. Given the recent attention that theory has received, and in particular given that much of that work has focused on managerial strategic choice, it is important to examine the relevance of that approach for union organizations. In addition, by examining a variety of reasons why union leaders might pursue mergers or affiliations, this study identifies several possible dimensions of strategic choice. Second, this study combines a statistical methodology with several interviews of union leaders. One of the hallmarks of industrial relations research, compared to other disciplines, is its emphasis that it be grounded in reality. The interviews no doubt contributed significantly to the author's understanding of the issues involved. Third, a related comment is that the author collected new data for this study, an arduous but often necessary task. Finally, the author rightfully distinguishes between union mergers versus union affiliations in her research.

The findings that gains in strategic capability is the main determinant for union mergers, while gains in power explain union affiliations are interesting, if somewhat less than dramatic. There seem to be several possible avenues to extend this research. First, it might be desirable to collect hard measures of some of the variables, rather than rely on union leaders' perceptions of them. A second possible extension might be to investigate the aspect of timing. What factors influenced union leaders in their decisions to seek a merger or

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affiliation? In particular, what conditions now exist as stimuli toward merger or affiliation that did not exist before? Another possible extension would be to follow the effects of the mergers/affiliations over time and examine whether mergers did enhance the parent union's strategic capability and whether affiliations did increase the parent union's power.

Thomas' paper on the effect of two-tier wage agreements on shareholder equity values of the firm addresses one of the age-old questions in industrial relations research: What impact, if any, do collective bargaining outcomes have on firm performance? In this case, he finds that two-tier wage agreements increase the cumulative average returns by 3.6 percent over a 60-day period. In addition, Thomas found considerable variation in both the direction and magnitude of the two-tier effect across firms. While these results are quite interesting, the paper did not provide enough information about the sample (size, industries represented, time period, etc.) and methodology (statistical procedure, other control variables included) to allow many comments to be made.

Questions about the theoretical and practical implications of the study also arise. An obvious practical question is whether a 60-day period is long enough to ascertain the full effects of the negotiation of a two-tier wage agreement. Clearly, 30 days after a settlement is not long enough for management and or the market to learn about the possible negative effects of two-tier wage agreements on employee morale, turnover, productivity, etc. Second, I found more interesting the secondary research question in this study, i.e., what explains the variation in magnitude and direction of the effect of two-tier agreements across firms. I would like to see more detail about this issue—simple descriptive statistics as well as an analysis of the underlying reasons. Finally, at least one theoretical question arises—does the efficiency wage model contribute more in explaining this study than does a more "simple" bargaining power approach?

Turner's research is different from the two previous studies in several ways, most notably in its comparative institutional approach. He examines the determinants of the stability and extent of worker interest representation in contemporary times, using case study evidence on the politics of work reorganization in the U.S. and West German auto industries. He finds that the characteristics of the industrial relations system—specifically, the (1) codetermination versus arm's-length unionism, and (2) a cohesive versus fragmented labor movement—explain the different industrial relations outcomes between the U.S. and West German auto industries in the 1980s more than cultural differences, market circumstances, industry structure, macroeconomic performance, craft versus industrial unions, or other factors. His work is challenging in several respects. First, his discussion of the "very real constraints faced by the UAW," regardless of leadership decisions or strategy, suggests again that there may be cases where environmental constraints may make strategic choice models inappropriate. Second, this research provides important practical implications for unions on how to stem the decline in union membership in the U.S.—they should pursue strategies that provide greater genuine integration into managerial decision making and strategies that provide a more centralized labor movement (interestingly, the work by Stratton-Devine may be relevant here). Finally, perhaps the most important contribution of this research is the intriguing and fundamental theoretical questions raised by his hypotheses and their corollaries. No doubt Turner's work will stimulate a great deal of work in both industrial relations theory and research.

DISCUSSION

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The paper by Lowell Turner focuses on the U.S. and West German auto industries, but it applies more broadly to the industrial relations systems in all industrialized market economies. He presents two very interesting explanations for the declining influence of unions in the U.S., Britain, France, and Italy in the 1980s. Specifically, he claims that the labor movements in these countries have lost influence because, first, they stressed arm's length collective bargaining rather than integrative codetermination and, second, they were fragmented rather than cohesive. Turner also claims that where integrative codetermination emerges in the absence of a cohesive labor movement (as in Japan), it degenerates into something akin to company unionism.

I commend Turner for tackling important, big-picture questions. It is possible that, in the full manuscript of his dissertation, he has proved his hypotheses convincingly. I was not, however, fully convinced by the evidence he had space for within the confines of a brief IRRA conference paper. Here are some challenges to the Turner hypotheses that I hope he will address in his subsequent publications.

First, although I generally agree with his hypothesis about the importance of codetermination rather than arm's length unionism, I would point out that Canadian unions share the U.S. tradition of arm's length unionism and, nevertheless, have done much better than their U.S. counterparts have in the past 15 years. Integrative codetermination thus may not be essential to maintaining union influence, even though it may be helpful.

Second, I think that Turner exaggerates the impact of the structural differences between the German and American labor movements. There is *some* evidence for Turner's hypothesis. The political influence of American labor has sometimes been weakened by splits within the labor movement (e.g., between the AFL-CIO and the National Education Association). Furthermore, the Michigan AFL-CIO may have an advantage over other state federations in exercising

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political influence because of the dominant position within the Michigan labor movement of a single union, the United Auto Workers. Nevertheless, there is a substantial degree of cooperation among American unions in political action and legislative lobbying. This cooperation mitigates the impact of decentralization on labor's political influence.

Factors other than those Turner stresses, such as the strength of each country's socialist tradition, may be more important than integrative codetermination and labor movement cohesion in explaining differences between Germany and the U.S. in union influence.

Finally, I agree in part with Turner's claim that integrative codetermination could undermine labor's independent role where there is a fragmented labor movement. Considering Turner's stress on the importance of union structure, however, it is paradoxical that he glosses over the structural differences between unions in Japan (enterprise unionism) and those in the U.S. (frequently, one union for all the companies in a single industry). Particularly with centralized industrial unions such as the Steelworkers, there have been cases where the national union organization has refused to allow concessions at struggling companies because these would undermine the integrity of the national bargaining pattern. Thus, even though the AFL-CIO is less centralized than the DGB in West Germany or the LO in Sweden, there may be enough centralization within the American labor movement already to prevent integrative codetermination from degenerating into company unionism.

The paper by Steven Thomas has a narrower focus than the Turner paper but provides more compelling proof of its claims. Specifically, Thomas shows that the market value of a company's stock rises when it establishes a two-tier wage system. I hesitate, though, to conclude that two-tier wage systems cut wages by more than they cut worker motivation and worker quality. Rather, investors may see two-tier wage agreements as a signal that management has tamed the unions with which it negotiates. Investors may thus assume that management has gained additional concessions besides the two-tier agreement that will contribute to the profitability of the firm.

Whereas Turner looks at the *consequences* of cohesiveness in the labor movement, Kay Stratton-Devine looks at the *reasons* for cohesiveness. She surveyed union officials and asked them to assess the amount of effort and money that their unions devoted to union mergers and affiliation agreements. Her paper correlates these subjective measures of effort and money devoted to mergers and affiliations with the respondents' assessment of whether union mergers would lead to membership growth, increased union power, higher salaries for union officers, etc. Since relatively little has been published on this topic, her correlations of subjective data on subjective data do constitute a contribution to the literature. As an economist, though, my bias is in favor of harder data. Perhaps, in a follow-up study, Stratton-Devine could look at Landrum-Griffin data on salaries of union officers to see if mergers lead to higher union salaries. Using such hard data would strengthen her results.

VIII. EMPIRICAL STUDIES OF THE EFFECT OF RENT CAPTURE OR ABILITY-TO-PAY ON WAGE LEVELS

Dedicated Taxes and Rent Capture by Public Employees

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This paper reports that alternative funding mechanisms and budgeting practices appear to provide different opportunities for public-sector unions to obtain higher wage rates and payrolls.[1] Two distinct types of local public funding are considered: general revenues and dedicated taxes. Governmental units receiving funding from general revenues typically compete with other districts, departments, or agencies through a budget process for a limited pool of funds raised by traditional taxation methods. In contrast, agencies that receive earmarked revenues from a dedicated tax are assured of funding without the need to justify their budget or level of service. Their funding falls outside the traditional local budget process, which is characterized by the comparison of costs and benefits of competing uses of public funds. This lack of competition potentially yields increased political and budgetary autonomy.

Proponents of earmarked revenues hold that this type of funding permits long-term planning and more efficient operation. Managers who are not concerned with competing for funds on an annual basis can take a longer-term view with respect to capital budgets, planned expansions, and other operations. Nevertheless, the permanent nature of the funding and the lack of checks and reviews through a normal budget process also creates opportunities for rent capture by public-

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sector employees and unions through higher wages, fringe benefits, and staffing levels. These higher costs potentially offset any efficiency gains from earmarking and argue for the use of traditional budget and financing methods. (A literature review on earmarking and rent capture is presented in Cromwell [1989].)

This paper tests whether the enactment of a dedicated tax leads to higher payroll and wages for public employees. Data from the Section 15 reporting system administered by the Urban Mass Transportation Administration (UMTA) provide payroll and wage levels for a homogeneous type of public employee—bus operators of local mass transit systems. These systems often use local dedicated taxes to support their operations. I independently collected information on when taxes were enacted and the historical circumstances leading to their enactment. Pooled time-series, cross-section regressions are used to examine the level and time path of payroll and wages following a tax enactment.

A potentially serious objection to the analysis is that the existence of a dedicated tax may be endogenous to the local wage process. The history of these taxes in the local mass-transit industry, however, strongly suggests that the principal determinant for the existence of dedicated taxes for transit are state-level policies for transit funding. A more plausible channel for bias is the presence of unobserved fixed effects that are correlated with both public-sector wages and dedicated taxes such as union strength, the voting power of public employees, tastes for good or bad government, or the local political environment.

To control for fixed effects, I use the standard "fixed-effects" or "within-groups" estimator. The results show that payroll and wages rise a statistically significant 20 percent in the six years following the tax enactment, and this increase remains stable. Simulations reported in Cromwell (1989) suggest that increases in labor costs eventually absorb all additional net revenues that result from enactment of a dedicated tax, and that these gains are maintained in spite of a gradual falloff in revenues over time.

Dedicated Taxes and Mass Transit

The data source for this work is the Section 15 Reporting System administered by UMTA. Section 15 of the Urban Mass Transportation Act establishes a uniform accounting system for public mass-transportation finances and operations. Payroll and employee hour data (which permitted construction of average hourly wage rates) were obtained for a homogeneous type of employee—bus operators—for 165 public transit systems from 1982-1985. The sample was limited to systems that operated only bus service (as opposed to subway, commuter rail, ferryboat, etc.), that operated at least five vehicles, that did not contract out service, and that provided complete information for all years of the survey. These payroll and wage data were combined with revenue data to look for evidence of rent capture from dedicated taxes.

By the end of the sample period, 64 of the systems reported having local dedicated revenue sources to support their operations. The UMTA data report the exact dollar value of monies spent from dedicated sources but provide little institutional information on the type of tax used. For this research, I have supplemented the UMTA data through a telephone survey of the managers or staff of transit systems reporting dedicated revenues, collecting information on the type of tax, year the tax was enacted, and historical circumstances surrounding the tax enactment. (Survey results are presented in detail in Cromwell [1989].) Property taxes were the most common type of tax observed (28 of 64 systems), followed by gasoline excise (17), sales (14), and payroll taxes (5). Eight of the dedicated taxes were enacted during the sample period and the other 56 during the 15-year period prior to 1982. Only five of the taxes required periodic voter approval, and none of the taxes was repealed during the sample period.

A potentially serious objection to the analysis is that the presence of a dedicated tax is the result of high public-sector wages. However, the process by which most of these taxes were enacted renders this possibility tenuous at best.

The historical circumstances surrounding the enactment of these taxes in the local mass-transit industry strongly suggest that funding policies at the state level were the major determinant of the existence of dedicated taxes for transit. In the late 1960s and early 1970s, the federal government provided capital assistance for the establishment of public transit systems subject to the provision of matching funds and operating assistance by state and local governments. States with established subsidy programs for transportation met the federal requirements from existing funding sources at the state level and from local general revenues. Many states without existing funding sources, however, encouraged the formation of special districts with taxing authority to meet the federal requirements. Thus, most of the taxes observed in this period were established when the district was created.

Taxes enacted after 1974 typically were instituted after the transit system had been publicly owned and briefly supported by local general revenues. Circumstances surrounding these taxes were varied, but apparently the drain on local general revenues for operating assistance was larger than originally expected and new funding mechanisms were required. This was especially true in areas desiring to expand their systems. Groups supporting the expansion of transit and dedicated taxes in general included downtown business interests; transit-dependent populations such as the poor, handicapped, and elderly; and transit unions.

Sample means show that the systems with dedicated taxes are, on average, three times as large as other systems in terms of both miles of service delivered and number of vehicle operators. Revenues, however, are four times as large on average, suggesting that systems with dedicated taxes have larger budgets relative to service provided. A breakdown of revenue composition implies that the use of dedicated taxes precludes the use of local general revenue sources. Among the dedicated-tax systems, earmarked revenues provide 40.4 percent of total funding, while local general revenues account for 1.9 percent. Systems without dedicated taxes, however, receive 23.7 percent of their funding from local general revenues and only 0.1 percent from earmarked sources. Thus, these two groups of transit systems exhibit extreme differences both in local funding mechanisms and in composition of revenues, suggesting that comparison of wages and payroll between the two groups is a useful natural experiment.

Average wages paid to vehicle operators were 16 percent higher in systems using dedicated taxes versus those without. This finding provides only prima facie evidence of rent capture, because several other explanations exist for this differential. First, dedicated-tax systems may have a higher rate of unionization than nondedicated-tax systems. Second, operators in dedicated-tax systems could be higher-quality, more productive workers. Third, dedicated taxes may be more common in high-wage areas. Finally, there could be several unobservable fixed effects correlated with both high public-sector wages and the use of dedicated taxes: for example, strong public-sector unions, tastes for good or bad government, and political structure. The economic analysis will attempt to control for these factors.[2]

Payroll and Wage Changes after Tax Enactment

While the sample period in this study is only four years, the dedicated taxes were enacted over a 17-year period. I exploited this variation in the age of taxes in order to make inferences regarding the time path of payroll, wages, and revenue following tax enactment. To this end, I constructed a variable called YEAR that equals the number of years that have passed since a tax was first enacted. The values of

YEAR for a system with a tax enacted in 1980, for example, are 2, 3, 4, and 5 for the 1982-1985 sample period years, respectively.

The econometric analysis uses pooled cross-section regressions with vehicle operator payroll and wage rates as dependent variables. The basic equation for estimation, shown in equation (1), uses the log of public operators' payroll (wage) as the dependent variable as follows:

$$\text{(1)}\quad LPAY_{it} = \alpha + \beta_1 LSIZE_{it} + \beta_2 LPRIWAGE_{it} + \beta_3 DEDREV_{it} + \beta_4 DEDREV_{it} * DEDREV_{it} + \sum_{j=1}^{17} \beta_{j+4}\, YEARj_{it} + \beta_{22} DUM83_t + \beta_{23} DUM84_t + \beta_{24} DUM85_t + \epsilon_{it}$$

$$(i = 1,\ldots,165;\ t = 1,\ldots 4).$$

Time-variant explanatory variables include the log of miles of service provided (LSIZE), the log of the private-sector nonunion wage (LPRIWAGE), and sample-year dummies (DUM83, DUM84, DUM85).[3] The impact of a dedicated tax is measured by the dollar amount of dedicated revenues collected per mile. (DEDREV), DEDREV-squared, and a length j vector of YEARj dummies, j = 1,...,17, measuring time since tax enactment. YEAR5 equals one, for example, when YEAR = 5. The YEARj and DEDREV variables are set to zero for systems with no dedicated taxes. To control for the presence of unobserved fixed effects I used the standard fixed-effects (FE) or "within-group" estimator discussed in Hausman and Taylor (1981). The cross-section observations are differenced from their individual means, and ordinary least squares (OLS) is run on the transformed data.[4]

Estimation results using payroll as the dependent variable are reported in equations (1) and (2) in Table 1. Equation (1) measures the impact of the dedicated tax on payroll by entering the level of dedicated revenues per mile, DEDREV, and DEDREV-squared into the specification. The estimated coefficient (standard error) of LSIZE is 0.700 (0.026). This suggests that economies of scale with respect to labor costs exist within transit systems. LPRIWAGE has an estimated coefficient of 0.436 (0.137), showing that nearly half of the variation in private-sector wages is reflected in the public-sector payroll wage. While my prior expectation was a relation closer to one, restricting the coefficient to one did not substantially affect the results that follow. The estimated coefficient on DEDREV in equation (2), which omits the year dummies, is 0.0947 and has a t-statistic of 4.53. This suggests that the average dedicated tax of $1.33 per mile raises payroll by 12.1

TABLE 1

Fixed-Effects Payroll and Wage Regressions[a]

	Log Payroll (1)	(2)	*Log Wage* (3)	(4)
LSIZE	0.700	0.686	0.023	0.013
(log miles)	(0.026)	(0.026)	(0.027)	(0.027)
LPRIWAGE	0.436	0.362	0.201	0.165
(log private wage)	(0.137)	(0.141)	(0.141)	(0.145)
DEDREV	0.0947	0.0607	0.0377	0.0047
($ per mile)	(0.0209)	(0.0266)	(0.0215)	(0.0274)
DEDREV*DEDREV	−0.0067	−0.0030	−0.0041	−0.0037
	(0.0032)	(0.0038)	(0.0033)	(0.0038)
Years since enactment				
YEAR1	---	0.051	---	0.044
(=1 if YEAR=1)	---	(0.036)	---	(0.037)
YEAR2	---	0.097	---	0.107
(=1 if YEAR=2)	---	(0.045)	---	(0.047)
YEAR3	---	0.123	---	0.034
(=1 if YEAR=3)	---	(0.050)	---	(0.052)
YEAR4	---	0.111	---	0.124
(=1 if YEAR=4)	---	(0.061)	---	(0.063)
YEAR5	---	0.099	---	0.115
(=1 if YEAR=5)	---	(0.074)	---	(0.076)
YEAR6	---	0.139	---	0.225
(=1 if YEAR=6)	---	(0.083)	---	(0.086)
YEAR7	---	0.103	---	0.163
(=1 if YEAR=7)	---	(0.083)	---	(0.086)
YEAR8	---	0.161	---	0.182
(=1 if YEAR=8)	---	(0.098)	---	(0.100)
YEAR9	---	0.215	---	0.195
(=1 if YEAR=9)	---	(0.099)	---	(0.102)
YEAR10	---	0.171	---	0.186
(=1 if YEAR=10)	---	(0.101)	---	(0.104)
YEAR11	---	0.178	---	0.185
(=1 if YEAR=11)	---	(0.103)	---	(0.107)
YEAR12	---	0.178	---	0.176
(=1 if YEAR=12)	---	(0.106)	---	(0.109)
YEAR13	---	0.178	---	0.170
(=1 if YEAR=13)	---	(0.108)	---	(0.111)
YEAR14	---	0.157	---	0.136
(=1 if YEAR=14)	---	(0.111)	---	(0.115)
YEAR15	---	0.143	---	0.120
(=1 if YEAR=15)	---	(0.117)	---	(0.120)
YEAR16	---	0.107	---	0.094
(=1 if YEAR=16)	---	(0.124)	---	(0.128)
YEAR17	---	0.068	---	0.080
(=1 if YEAR > 16)	---	(0.125)	---	(0.129)

TABLE 1—(*Continued*)
Fixed-Effects Payroll and Wage Regressions[a]

	Log Payroll (1)	(2)	*Log Wage* (3)	(4)
DUM83	0.007	0.022	0.057	0.066
	(0.025)	(0.026)	(0.026)	(0.027)
DUM84	0.043	0.059	0.096	0.106
	(0.028)	(0.029)	(0.029)	(0.030)
DUM85	0.059	0.081	0.127	0.142
	(0.035)	(0.037)	(0.036)	(0.038)
R-squared	0.690	0.699	0.472	0.489
Mean dep. var.	7.219	7.219	7.219	7.219
Log likelihood	824.6	834.8	805.3	815.6
Hausman test stat.	131.0	156.4	17.9	39.2

[a] Estimated coefficients (standard errors).

percent. Equation (2) measures the impact of the dedicated tax on payroll by entering both the level variables (DEDREV and DEDREV-squared) and YEAR dummies into the specification. The estimated coefficient for DEDREV is 0.0607 and has a t-statistic of 2.28. The YEAR dummies remain statistically significant and reveal growth in payroll in the early years of the dedicated tax. For the average dedicated tax, the results suggest that payroll grows by 21 percent during the first four years following tax enactment, then reaches a 30 to 34 percent higher level in Years 10 through 15.

Estimates using wage rates as a dependent variable instead of payroll are reported in equations (3) and (4). Contrary to the payroll results, a statistically significant increase stemming from dedicated revenue levels is no longer indicated. The YEARj dummies, however, show a statistically significant rise in wages following tax enactment. The increase is on the same order of magnitude and follows a similar pattern to the payroll estimates. Wages rise from an initial base of $8.23 to $10.00 by Year 6 and remain at this level through Year 12 before declining slightly. The higher wages are statistically significant in Year 2 and in Years 4 through 13. As with the payroll results, the 95-percent confidence interval surrounding the estimate grows with higher values of YEAR.

Conclusion

This paper provides a direct test of whether the enactment of a dedicated tax leads to rent capture by public employees. In a natural experiment provided by the wide variation in funding arrangements for local mass-transit systems, the empirical analysis reveals a systematic link between changes in the wages and payroll for a homogeneous type of employee—bus operators—and enactment of a dedicated tax. Estimations results show that payroll and wages rise about 20 percent in the years immediately following the tax enactment, and this increase remains stable over time.

The results suggest that enactment of a dedicated tax leads to significant rent capture by public-sector unions in the local mass-transit industry. They support the argument that traditional budgeting methods that weigh the costs and benefits of competing uses of funds act as a check on public employee power.

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Endnotes

[1] This paper is a condensed version of my working paper Cromwell (1989) which is available from the author on request.

[2] Union status is controlled for as a fixed effect. No information is available on the human capital of the public vehicle operators. I assume that bus drivers are homogeneous across transit systems and over time.

[3] To measure regional variation in private-sector wage rates, I ran a standard human-capital wage regression on the universe of private-sector workers in the Current Population Survey, controlling for industry, occupation, and 94 distinct geographic areas interacted with union status. The average human-capital measures for motor vehicle operators were then used to project a union and nonunion wage rate in each geographic area.

[4] Cromwell (1989) also uses a generalized least squares (GLS) procedure that controls for cross-section heteroscedasticity and time-wise first-order correlation of errors. If fixed effects re present and correlated with the independent variables, however, the GLS estimates are inconsistent. Hausman specification tests reject the null hypothesis of no correlated fixed effects at the 99.5 percent confidence level. The GLS results, however, are qualitatively similar to the results presented here.

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Are There Economic Rents For More Restrictive Occupational Licensing Practices?

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Occupational licensing is mentioned by economists as a barrier that prevents the efficient allocation of human resources which results in a potentially lower quality of outputs, and in a higher level of income for the practitioners (Benham, 1980). The occupations presumably do this by establishing a minimum competency standard that is set by the states. The states, in turn, vest the authority to determine standards in either a regulatory board or in a quasi-governmental organization composed of the members of the profession. Consequently, the profession possesses the power not only to set the level of service quality but also the supply and the price of the service.

This issue is of increasing importance, since the economy has shifted to a more service-oriented one where licensed occupations are more prevalent. In contrast to unions, which have declined in membership to approximately 16 percent of the nonagricultural labor force, licensed occupations have grown to almost 18 percent of the work force, from approximately 3 percent in 1950, and there are approximately 500 licensed occupations in the U.S. (Data gathered from State Licensing Boards, 1989, and U.S. Department of Labor, 1969).[1] Given the growth in both the number and percent of the labor force that is licensed, it is important to be able to assess the economic impacts of the role of state government in regulating these occupations.

Previous studies linking the role of licensing to interstate migration, new entrants, and the earnings of practitioners have been cross-sectional and have generally focused on only one type of statute or administrative procedure; for example, the pass rate for new entrants (Maurizi, 1974; Pashigian, 1980; Kleiner, Gay, and Greene, 1982).

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Unfortunately, they have not taken into account the fact that both statutes, as well as administrative procedures, may have economic effects. Further, there may be different impacts of government regulation over time. In this study, I correct for some of the deficiencies in past studies which examine whether persons in licensed occupations are able to capture economic rents from more stringent occupational licensing statutes and practices.

The paper examines five universally regulated occupations over a 16-year period in the 1960s and 1970s and finds that there is the potential for economic rents to be derived from both more rigorous state statutes and from the administration of state testing of new entrants. For example, the results for dentists and lawyers show that increases in the supply of practitioners is associated with increases in the failure rate. Further, the analysis shows that higher failure rates for dental exams and more rigid standards for the other occupations are weakly associated with higher incomes in the occupation. Unfortunately, no more recent data are available to test the impacts of more current public policies. In the remainder of the study, I describe the rationale for licensing as a legal institution for the states, present the unique data set developed to test the impact of barriers, provide estimates from alternative specifications of the model, and suggest future areas of research.

Rationale for Licensing as an Institution

Practitioners in the professions, some economists, and several civic organizations have argued that occupational licensing is a method of providing the public a method to screen "lemons" and provide a minimum level of competency for the service (Leland, 1976). Others have suggested that licensing provides a financial "bond" that practitioners must post, like passing an exam and meeting other conditions, to ensure a high quality of service, and that occupations in which there is repeat business can ensure high performance without licenses (Klein and Leffler, 1981). These conditions serve to prevent "quacks" from entering the market and underpricing competent practitioners. Further, by reducing the lower part of the distribution of any occupation, individuals in that line of work are encouraged to increase their investment in human capital, thereby increasing the overall level of competence in the field (Shapiro, 1986). The state institutes licensing to provide a higher level of overall service. These benefits are presumably one of the major justifications for government intervention in these occupations in order to protect the public.

An alternative outcome of licensing in the labor market for these occupations involves controls on the restriction of supply. A state governing board can screen new entrants to the occupational labor force, who come from within the state boundaries. However, this control alone would be insufficient to reduce supply and raise price under a system of nationwide endorsement of licensed practitioners. To the extent internal barriers raised the earnings level above some national norm, migrants from other areas would be induced into the state, and earnings and employment growth rates would again tend toward the national norms. Therefore, the governing board must also screen relevant migrants if it wishes to control supply and price. If this second form of barrier is effective, both the jurisdiction in question and the nation as a whole may experience lower employment and higher earnings levels in the profession.

Legal and Labor Market Data

In order to measure the restrictiveness of the state-by-state licensing statutes, I used six dummy variable measures and an aggregate index that were developed in order of increasing relative restrictiveness which were mutually exclusive statutory levels. First, the L_1 variable represents universal endorsement of all applicants. Unfortunately, none of the regulated occupations that were available in the data set had this form of regulation of new entrants which might be the optimal form of unrestricted market mobility. Second, the L_2 variable indicates a statute where the applicants must meet the entry requirements in force at the time of initial licensure, and this reflects a modest form of regulation of new entrants from other states. The third type of statute, L_3, notes endorsement based on current standards and previous experience. Fourth, L_4 represents an explicit clause where reciprocity is based on current standards in the state, as well as on experience. Fifth, the L_5 variable represents a statute where an applicant must meet the same requirements as in-state applicants and pass an examination. Finally, the L_6 variable indicates that there is a reciprocity agreement only with certain other states, and that new entrants must meet residency requirements and all other general and specific training requirements, as well as take the new entrant examination. If an individual wishes to practice in a non-reciprocity state, an agreement must be reached with the destination state's board regarding requirements. This statute most closely approximates a cartel arrangement among the states.

A further set of legal dummy variables was used to measure the impact of changes in the level of restrictiveness of the statutes. This variable included an overall measure of minimum age, citizenship, residency, proof of good moral character, general education, special education requirements, and experience. Changes in these general measures of licensing requirements were used to create another set of legal variables to measure the change of a statute in a state increasing these restrictions on persons entering the occupation (LM). The expectation is that over time the impact of the more restrictive statutes would become known in the labor market for the occupation, and may increase earnings for practitioners.[2] Similarly, as a less restrictive statute became better known in the labor market, and more individuals entered the state occupational labor market, income levels would be expected to drop (ML).[3] I also was able to obtain information on one of the administrative procedures used in the states to potentially restrict entry—the yearly pass rates for each state for lawyers and dentists over this 16-year period.

The primary data used for the labor market variables were obtained from the Continuous Work History Sample (CWHS). Information was available for the years 1960-1976 on individuals covered by social security and was both in the occupation and the major industry code, subject to the confidentiality requirements of this government agency. Since the purpose of the study was to find the labor market impact of state occupational licensing requirements, the data were aggregated to the state level by the Department of Commerce to avoid individual disclosures. The data are state-by-year information for each occupation. Using this data set, I was able to examine five major occupations consisting of cosmetologists, dentists, lawyers, accountants, and engineers. The data set can offer some unique statistical insights because it allows for occupation-specific controls such as employment-change, migration, new entrants and exits, gender, and race. The annual income data are social security first quarter earnings that have been annualized for each state and occupation, and are in constant 1967 dollars. The earnings data used in the econometric specifications were the logarithm of the change in earnings in the state.

The data are limited in a number of ways. First, the sample contains only persons in the occupation who were employed in professional offices in each of the occupations, and this may bias downward the results obtained from income and the turnover measures such as yearly migration and entrants into the occupation.[4]

Second, due to confidentiality constraints, I was not able to use data from the smallest 14 states by population, and there were missing values for some of the other states. Nevertheless, the data set allows a time-series analysis of the impact of state statutes and administrative variables, such as the percent of individuals passing licensing tests, for several of these occupations.

Estimates from the Model

In this section, I present estimates of two alternative issues which examine the role of economic conditions on the log odds of the pass rates for two of the occupations in our sample (i.e., dentists and lawyers) (Table 1), and then I estimate the basic earnings model with licensing (Table 2). The earning estimates are part of a more fully specified model using disequilibrium specifications (Quandt and Rosen, 1988). Although alternative OLS, two-stage least squares, and random effects models were specified and estimated for the earnings equations, the models presented in Table 2 are both cross-sectional and fixed-effects models, which are generally considered the more restrictive ones, and include controls for state, year, and occupation-specific and state labor market controls listed at the bottom of the Table.[5] However, in none of the other econometric specifications were there consistent significant impacts of the policy variables on earnings or earnings changes.

The results presented in Table 1 are a replication and time-series

TABLE 1
Estimates of the Impact of Occupation-Specific Economic Conditions on State Pass Rates°
1961-1976

Dependent Variable Log Odds of the Pass Rate°°	Dentists N = 496	Lawyers N = 609
Lagged employment change (percent)	−0.79 (0.20)	−0.35 (0.06)
Log of change in earnings	−1.63 (1.17)	0.76 (0.33)
Intercept	22.84 (11.65)	−5.83 (3.30)
R^2	0.07	0.07

°Standard errors are in parentheses

°°With controls for year of exam

TABLE 2

Impact of Licensing Policies and Practices on Earnings: Cross-Section and Fixed Effects Estimates for Accountants, Cosmetologists, Dentists, Engineers, and Lawyers, 1961-76

Log of Change in Earnings	ALL Occupations		Dentists		Lawyers	
	Cross-Section°	Fixed Effects°°	Cross-Section°	Fixed Effects°°	Cross-Section°	Fixed Effects°°
Pass Rate	---	---	−0.230 (0.170)	−0.240 (0.180)	−0.010 (0.100)	−0.020 (0.100)
L_1 - Endorsement on current standards	0.010 (0.010)	0.007 (0.021)	−0.020 (0.020)	−0.010 (0.020)	0.040 (0.050)	0.150 (0.140)
L_4 - Reciprocity	0.010 (0.020)	0.010 (0.020)	−0.010 (0.020)	0.010 (0.030)	0.020 (0.030)	0.020 (0.030)
L_5 - Endorsement plus exam	0.020 (0.010)	0.020 (0.020)	−0.010 (0.020)	0.002 (0.020)	0.030 (0.030)	0.040 (0.030)
L_6 - Reciprocity plus exam	0.010 (0.010)	0.010 (0.020)	−0.001 (0.024)	0.010 (0.020)	0.010 (0.020)	0.020 (0.030)
LM - Change to more restrictive	0.004 (0.010)	−0.001 (0.013)	0.010 (0.010)	0.010 (0.020)	−0.010 (0.020)	−0.004 (0.022)
ML - Change to less restrictive	−0.020 (0.020)	−0.013 (0.022)	−0.010 (0.020)	−0.010 (0.020)	−0.020 (0.070)	−0.004 (0.079)
Constant	−0.020 (0.020)	---	0.040 (0.030)	---	0.020 (0.040)	---
R^2	0.08	---	0.11	---	0.09	---

Standard Errors are in parentheses

°With controls for year, state per capita income, and the following occupation specific variables: net migration, employment-change, net entrants, race, and gender.

°°With controls for year, state, state per capita income, and the following occupation-specific variables: net migration, employment-change, net entrants, race, and gender.

extension of a model first used by Alex Maurizi to examine the impact of economic rent seeking behavior by licensed practitioners during the 1940s and 1950s (Maurizi, 1974). In the model, the lagged percentage change in occupational employment (i.e., labor supply) in the state and earnings determine the pass rate for dentists and lawyers. The results presented as log odds to account for the limited dependent variable are supportive of the hypothesis that when there is a recent increase in the supply of practitioners in the occupation, the licensing board for the occupation restricts supply by reducing the pass rate. For both dentists and lawyers, the value of the coefficient is statistically significant at conventional levels with controls for year of the exam.[6] Over time, this rent-seeking behavior could result in higher earnings that may be attributed to the ability of the licensing board to restrict entry when there was a potential increase in the supply of practitioners. The cumulative impact of this behavior would be an increase in incomes for persons in the occupations as supply is restricted.

In Table 2, the results for each licensing procedure or practice are presented in the columns. The statutory results (L_3 through L_6) show the impacts for all the occupations in the sample as well as separate regressions for dentists and lawyers, relative to L_2, the most lenient statute of endorsement by initial requirements in the state.[7] The estimates for dentists show that increases in the pass rate are negatively associated with higher yearly changes in earnings by persons in the occupation, and that a one percent increase in the pass rate is associated with a 0.23 percent decrease in change in annual earnings for practitioners.[8] For lawyers, the pass rate variable was negative as hypothesized, but it had a large standard error.

The estimates for the individual statutes for all the occupations in the sample show that relatively more stringent licensing statutes have a weak positive impact on occupational earnings in both the cross-sectional and fixed effects results relative to a policy of universal endorsement by initial requirements of all new applicants. However, the change in a statute from a less to a more restrictive statute was not statistically significant in raising incomes, but changing to a less-restrictive statute reduced earnings changes with a standard error equal to the coefficient. The estimates suggest that more stringent licensing statutes weakly impact the earnings of the practitioners in our data set. These results are consistent with those found by Pashigian (1980) and Kleiner et al. (1982) on cross-sectional census data for the statute variations. However, if leisure is a normal good, then the practitioners may charge higher hourly rates and work fewer hours. Unfortunately, the data do not allow a test of this hypothesis. Another reason for the weak results on earnings changes may be that licensing practices have its greatest influence on the new or marginal entrants where earnings changes may be dominated by incumbents in the occupation. Consequently, even with a retirement rate of two percent a year, the model is not able to detect variations in licensing practices on earnings changes.

Conclusions

This study has presented new evidence on the role of economic conditions on pass rates for two occupations as well as the impact of occupational licensing statutes and practices on earnings for five occupations over a 16-year period. The results show that for dentists and lawyers, an increase in the supply of new practitioners is associated with a decrease in the pass rate, which could serve as a source of economic rents for these practitioners. The impact of statutes and pass rates were weak in influencing the earnings changes of practitioners. Given the growth of the role of state government in regulating numerous occupations, and the increase in the demand for these services, it is important for citizens and legislatures to be made more aware of the costs of these practices. An overall assessment of licensing practices, however, also should include the potential benefits, so that the public can accurately evaluate the full impact of this practice as a potential source of rents in the labor market.

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Endnotes

[1] We gathered information from the state licensing boards of New York, Colorado, Michigan, Illinois, and Virginia and then used a weighted average of the results from these states to obtain our overall estimates.

[2] The states averaged one statute change every 6 to 7 years, with most states raising the entrant requirements for the occupations in this sample.

[3] I also used another set of legal variables measuring the number of years since the change in a statute from either a more or less restrictive statute with no qualitative change in the statistical results obtained in Table 2.

[4] The percent of the persons in the industry-related occupation between 1970 and 1980 was, 23% for accountants, 95% for cosmetologists, 91% for dentists, 11% for engineers, and 76% for lawyers (Source, Bureau of the Census—Subject Reports Occupation by Industry).

[5] The models estimated were sensitive to the type of model specification and the technique used. For example, the use of random effects models showed higher values for the licensing policy coefficients, and lower standard errors, and the use of the log of earnings levels also showed more significant effects for the statutory variables.

[6] Alternative specifications included the current employment change variable as well as instrumenting income in the pass rate equation, using state quality-of-life as exogenous to identify the model. This specification produced the same qualitative results.

[7] Estimates using one dummy variable, for those states which had a statute more restrictive than endorsement (L_2), showed coefficients and standard errors of 0.008 (0.010) for *all* occupations, −0.02 (0.02) for dentists, and 0.02 (0.03) for lawyers in the fixed effects models.

[8] Using instruments for pass rates show negative, but insignificant, estimates on earnings change.

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Ability-to-Pay, Rent Capture and Salaries in the Private Sector

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Are Profits Shared?

The 1980s have seen major growth in compensation that explicitly links pay to company performance. For instance, the prevalence of employee stock option plans and profit-sharing bonuses has risen substantially in order to provide workers with direct incentives to raise productivity. However, perhaps compensation was already (implicitly) tied to profits. In the personnel and industrial relations literature, "ability-to-pay" is considered an important criterion in wage setting. If so, the hypothesized benefits of profit sharing may be muted because the new structures offer little change from previous practice.[1] This study looks at whether wages paid by some large employers varied with corporate performance over the course of as many as 33 years.

One hint that compensation may vary with profitability is that a substantial portion of wage variation among workers is not linked to standard measures of human capital or working conditions but to measurable characteristics of employers, such as industry (Dickens and Katz, 1987), establishment (Groshen, 1988b, 1989), and firm size (Brown and Medoff, 1989). Empirical tests of explanations for the apparent importance of employer attributes to wages have been hampered by lack of detailed data on employees, their jobs, and their employers.[2] Even with such data, many predictions of these models may be indistinguishable empirically.

For example, pay variations due to sorting by human capital, working conditions, or efficiency wages are all profit-maximizing responses. Thus, these models do not predict a correlation between wages and profits. If wages vary because information costs, wages may be negatively correlated with profits, but wage differentials should be short-lived.

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However, the rent-capture model provides a testable prediction to distinguish it from other theories: unless workers fully capture all company rents, pay should be correlated with firm profits. The necessary conditions are the existence of above normal profits and workers' ability to extract them. Under these conditions (as is discussed below), variations in wages reflect variations in both the rents and the relative bargaining power of labor and capital.

Models of rent capture outside unions differ in the identity of bargaining agents for workers and in the enforcement mechanisms for bargaining. For instance, economists have posited the existence of informal organization by workers (Dunlop, 1957), the union-threat effect (Dickens, 1986), and the influence of insiders relative to outsiders (Solow, 1985). Or, in managerial-capitalism/agency-cost models, information asymmetry allows managers to mediate the division of rents between labor and capital (Aoki, 1984).

Previous empirical evidence suggests that rent capture may be an important component of wages, but relies heavily on aggregate, rather than firm-level data. First, there is the often found link between industry differentials and industrial concentration (or profit rates).[3] Another strand of literature finds evidence that unions capture corporate rents.[4]

In some of the rare studies using firm-level data, Abowd (1989), Kleiner and Boullion (1988), and Leonard (1989) all find evidence supportive of theories of rent capture. Unlike previous studies, this paper compares firm-level nonunion and union wages (controlling for detailed occupation and city) to a detailed measure of corporate performance for an extended period of time.

The Relationship Between Wage Differentials and Accounting Profits

Accounting profits are often used as the basic measure of corporate rents in spite of two basic problems.[5] The first problem is that variations in accounting practices over time and companies affect accounting profits. Below, tests are performed in three ways: on a pooled sample, on cross-sectional averages, and on independent, within-company samples. The cross-section results net out effects of variations in accounting practices *over time*, while measuring long-term profit and wage differences. In contrast, the within-company samples net out the impact of different practices *among firms*.

Second, accounting profits attempt to measure a firm's return to capital, rather than the total economic rent before it is divided between capital and labor. Since all compensation is considered a cost of production, whether or not it contains a rent-sharing component, any rent-sharing wage premium reduces accounting profits.

Suppose labor and capital bargain over the rents generated by a firm (π). The proportion won by labor (p, the "sharing rule") registers as an increase in the wage differential (δ), raising the wage bill by δwL, where L is firm employment and w is the going wage. Then, the wage differential is:

$$(1) \qquad \delta = p\pi/wL.$$

If $p = 0$, the labor market is perfectly competitive; all rents go to capital. If $p = 1$, the firm is essentially owned by labor.

Capital's share of the rents is operating income, or accounting profits:

$$(2) \qquad I = (1 - p)\ \pi.$$

Division of the total differential of (1) by that of (2) yields:

$$(3) \quad \frac{d\delta}{dI} = \frac{1}{wL} \ \frac{[p\ d\pi + \pi\ dp]}{[(1-p)\ d\pi - \pi\ dp]}.$$

Thus, the sign of $d\delta/dI$ is ambiguous. For example, if π and p both increase or decrease, the sign depends on the sign of the denominator in (3), which depends on the coefficient of variation of π compared to that of p:

$$(4) \qquad \text{sign}\,[d\delta/dI] = \text{sign}\,[d\pi/\pi - dp/(1-p)].$$

If rents vary more than does the sharing rule, the coefficient on I will be positive, otherwise δ and I will be negatively related.

The statistical model estimated below is as follows:

$$(5) \qquad \delta_{jt} = \beta I_{jt} + \epsilon_{jt},$$

where j indexes the company and t indexes time. Thus, the estimated coefficient on I_{jt} has the sign predicted in (4) if rents are shared and p and π move together. Under the null hypothesis of no rent capture, $\beta = 0$, because $p = dp = 0$. If rents are captured by workers, and sharing rules vary less over time than do rents because sharing rules reflect something fundamental about the relationship between capital and labor in firms, then $\beta > 0$. Across firms, sharing rules may vary as much or more than do rents, so $\beta < 0$. However, short-run profits are notoriously volatile, so if p is based on long-run measures of profitability, it may appear to vary in the short run.

The Data

This study uses an annual private wage and salary survey that has been conducted in Cleveland, Cincinnati, and Pittsburgh by the Personnel Department of the Federal Reserve Bank of Cleveland (FRBC) for at least 34 years. The survey is part of the annual budget process at the FRBC. In return for their participation, surveyed companies are issued result books for their own use.

The 20 to 40 ongoing participants in each city are chosen by the FRBC to be representative of employers in the area. An average of 76 companies are covered per year, although 200 companies have participated in the survey at one time or another, for an average of just under 13 years each. The industries included vary widely; the emphasis is on obtaining employers with many employees in the occupations surveyed. The participants include government agencies, banks, manufacturers, wholesalers, retailers, and utilities.

Each year 65 to 100 occupations are surveyed; the average firm reports wages for 24 occupations per year. All jobs covered fall into one of five occupational groups: office, maintenance, technical, supervisory, or professional. Many occupations are divided into grade levels by responsibility and experience. Job descriptions are at least two paragraphs long.

Each entry gives the mean or median salary for all individuals employed in an occupation by an employer in the city.[6] Cash bonuses are considered part of the salary, although fringe benefits are not.

The dependent variable in the analysis below is the wage difference (over the city mean for the occupation) paid to the average occupation by a firm in a particular year. Following the method used in Groshen (1988b), log wages are regressed on occupation and employer dummies in each city in each year. The estimated coefficient on each firm dummy (after standardizing the mean to zero for each city-year) is taken as the best estimate of the average employer wage differential (EWD) paid to all workers by that employer in that year. All observations are used to construct the log point wage differentials, which can be interpreted as approximate percentage point differences.

The source of financial information for employers is Standard and Poor's Compustat file. Financial data were merged for all possible matches, based on corporate affiliation. Reliance on Compustat excludes government agencies, most banks, and small, foreign, or privately held companies from analysis.[7]

The complete data set has 2,589 company-years of observations.[8] Lack of Compustat information narrows the sample down to 78 firms, each observed for an average 12 years (at least once, up to 28 times), for a total of 950 company-years. These companies include a bank, 8 utilities, and 69 manufacturing or trade firms. Thirty-one employers come from Pittsburgh, 30 from Cleveland, and 17 from Cincinnati.

These are large companies: median assets are two million (1983) dollars, but range from under $0.5 million to $31 million. The number of employees in the entire corporation (averaged over the period observed, but not just in the cities surveyed) ranges from 550 to 500,000, with a median of 8,400.

Characteristics of Employer Wage Effects in the Sample

Certain previously noted characteristics of EWDs are visible in these data. First, Groshen (1988b, 1989) estimates the variation of EWDs in BLS Industry and Area Wage Surveys and finds standard deviations of 13 to 15 percent. In the sample matched with Compustat data, the standard deviation is slightly lower (11 percent), perhaps a result of the way the sample was chosen or maintained or of the companies' desire to minimize differences.[9] On the other hand, the EWD variation found here is greater than that found among electronics firms (Leonard, 1989).

Another important characteristic of EWDs is their persistence over time. Groshen (1989) finds strong persistence of employer wage effects over the course of six years in a BLS area wage survey, while Leonard (1989) does not find it over the course of five years. In this survey, EWDs also prove quite stable over periods five times as long as those in the previous two studies.

One demonstration of the stability of EWDs is that their variance over time within companies is much smaller than their dispersion across companies. In the small sample, the standard deviation of firm wage effects over time averages 6 percent (ranging from 2 to 15 percent).

We can also track the decay of correlations in EWDs over time. The correlations begin at .91 for observations one year apart; then they decline perceptibly each year for the next 10 years, to the neighborhood of .60. After that, they remain fairly constant, with a very slight downward drift, for the next 20 years. For the 16 firms observed that long, there is still a remarkably high correlation of .5 between EWDs in 1955 and 1988. So, while EWDs do vary somewhat over time, they seem to self-correct eventually.

The strong persistence of EWDs suggests that if they are based on rents, they are based on long-term rather than short-term measures. Perhaps most importantly, however, the persistence of EWDs over time rules out temporary error as a major source of such variation.

Empirical Results

Table 1 presents the results of running three specifications of the regression shown in (5), on three versions of the FRBC sample. Panel A shows results for the entire pooled sample. In general, these data suggest that higher operating income may be associated with lower wages for a firm's work force. In the first specification, estimated EWDs are regressed on operating income divided by assets. Division by assets controls for capital stock. The coefficient is negative and significant, but it explains very little (0.4 percent) of the variation in EWDs.

Panel B shows income and assets (in 1983 dollars, adjusted by the Consumer Price Index) independently, rather than imposing the same coefficient on them. These are entered in levels rather than in logs (which would make them easier to interpret as elasticities, and more similar to the previous specification) because operating income is occasionally negative. This version suggests that assets have a significant positive influence on wages, while income has a smaller, negative, and imprecisely measured effect. The fit of (2) is vastly better than that of (1).

Panel C reports results controlled for number of employees in the firm. The sample shrinks in this specification because employment data are not consistently available. The presence of employer size does not reduce the estimated coefficient on income over assets, even though the smaller sample size renders the coefficient insignificant by standard criteria.

Panel B shows cross-sectional evidence, which presumably nets out noise in measures of profitability and wage differentials. If wages are based on long-term rather than short-term measures of rents, then this approach may be particularly appropriate. The first two versions suggest the possibility of a mildly positive effect of profits on wages. This could suggest that between companies, rents tend to vary more than do sharing rules. But, the results using the third specification are quite consistent with those of the pooled sample. These inconsistencies are difficult to interpret.

TABLE 1

Employer Log Wage Differentials as a Function of Operating Income

Independent Variable	Sample Mean (Std. Dev.)	Coefficient (1)	Estimates (2)	(Std. Error) (3)
A. *Pooled Sample*[a]				
Operating Income / Assets	0.154 (0.059)	−0.127 (0.062)	—	−0.144 (0.089)
Operating Income (millions, 1983 dollars)	0.814 (1.425)	—	−0.004 (0.006)	—
Assets (millions, 1983 dollars)	4.915 (7.091)	—	0.006 (0.001)	—
Log(Employment)	3.186[c] (1.454)	—	—	0.019 (0.004)
R^2	—	0.004	0.114	0.048
N	950	950	950	586
B. *Company Cross-Section Sample (Averaged Over the Period Observed)*[b]				
Operating Income / Assets	0.148 (0.059)	0.043 (0.199)	—	−0.166 (0.205)
Operating Income (millions, 1983 dollars)	0.675 (1.283)	—	0.031 (0.024)	—
Assets (millions, 1983 dollars)	4.114 (6.052)	—	−0.000 (0.005)	—
Log(Employment)	3.024[c] (1.410)	—	—	0.020 (0.008)
R^2	—	0.006	0.150	0.073
N	78	78	78	76

C. *69 Within-Company Independent Longitudinal Samples*

	Number of Coefficient Estimates	
	Negative (*significant at 10% level*)	Positive (*significant at 10% level*)
Operating Income / Assets	42 (15)	27 (8)

[a] The mean (s.d.) of the dependent variable is .051 (.113) log points.
[b] The mean (s.d.) of the dependent variable is .034 (.102) log points.
[c] Mean taken over the smaller sample.
Source: Author's calculations from Federal Reserve Bank of Cleveland Community Salary Survey and Compustat, years 1955-1988.

Finally, Panel C shows the pattern of coefficients obtained on within-company regressions over time. Of the 69 companies with three or more observations, 23 have estimated coefficients significantly different from zero. Of these, almost two-thirds are negative. Overall, 42 companies (61 percent of the sample) have a negative coefficient.

Conclusion

These results suggest the possibility of an important link between wages and rents, although in the specifications reported here, profits do not emerge as a strong predictor of company wage level. The negative association between wages and operating income suggests that the "sharing rule" for rents may vary substantially among companies and over time. Both results render it questionable whether implicit rent-sharing arrangements have provided a direct, dependable link between corporate rents and employee compensation in the past.

However, these results pertain only to the simplest model of rent capture. In future work, I intend to estimate more explicit models of the sharing rule (using measures of unionization, union threat, ownership structure, and differences by occupational group, etc.), and explore different measures of profits (introducing lagged income, cash on hand, return on equity, etc.).

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Endnotes

1 Nevertheless, it is possible that making the deal explicit (and, perhaps contractual) enhances the incentive effect over less certain arrangements.

2 Groshen (1988a) reviews models of employer wage differentials.

3 Groshen (1988a) reviews these studies.

4 For example, see Rose (1987) for the trucking industry and Freeman and Medoff (1984) for a review of other studies.

5 Accounting profits, or net operating income, is defined as (sales revenue) — (cost of goods sold) — (selling and administrative expenses).

6 Means were used for 1955-73, and medians were used for 1974-88. Coefficients estimated separately on means and medians for years when both are available (1974 and 1981-8) are highly correlated (.97 to .99).

7 Observations from these employers were used to estimate the wage differentials but could not be included in the analysis of the link between wages and rents.

8 The data set lacks observations for some cities in some years because the data were not found.

[9] BLS wage survey samples are intended to be randomly selected. Although results are publicly available, publication can be delayed for up to a year and a half. In contrast, the strongest incentive for participation in the FRBC survey (the results of which are usually issued within three months) is an interest in using the data for setting salaries. Thus, it is more likely that FRBC salary survey results directly affect the wages of the companies surveyed.

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Rent Capture in the Public Sector: The Case of Public School Unionism

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The rent capture ability of public sector unions has been well documented in the literature. Studies have shown that unions not only increase their members' wages but also increase employment (Freeman, 1986). These results have led to the conclusion that public section union members are able to transfer wealth from local taxpayers to themselves. In fact, when state legislators first began to recognize public sector unionism, Wellington and Winter (1969) warned of the great economic power afforded governments because of their monopoly position. However, Freeman (1986) argues against their claims on three counts. First, governments face tax and budget constraints that create a potentially more elastic, rather than a less elastic, demand for labor. Second, in the long run cities and states are not really monopolies because residents and businesses can move among jurisdictions. Third, in many cases public employees are forbidden to strike, and unlike the private sector, even though employees may stop work, tax revenues continue to flow to local public coffers.

While much work has been devoted to estimating the rent-capture ability of public employee unions, very few studies have dealt with the possible mitigating effects of local government structure and market conditions on union bargaining power. An extensive literature examines determinants of bargaining outcomes (Kochan and Wheeler, 1975; Gerhart, 1976; Kochan and Block, 1977; and McDonnell and Pascal, 1979). However, this literature has not been linked to studies of the effects of unions, with a few exceptions. Inman (1981) developed a model of public sector employment and budgets with union representation endogenous and found mixed results with respect to union effects on employment of various types of public employees. Freeman (1986, p. 62), in his survey of the public sector unionism

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literature, concludes that "what is lacking, and needed, is a consistent analysis of the full effects of public sector unionism on labor costs, employment, and finances."

This paper estimates the simultaneous relationship between bargaining outcomes and public school budget allocations, in particular teacher payrolls. Thus, we are able to examine how budget allocations and local economic conditions influence the rent-capturing abilities of public school teacher unions. In particular, the analysis focuses on the relationship between reduction-in-force (RIF) provisions and budget allocations for unionized school districts in the state of New York. The RIF provision is chosen as the representative contract provision, since it gives unions partial control of employment decisions which in turn puts them in a position to influence budget allocations. Eberts and Stone (1986), following McDonald and Solow (1981), show that successful negotiation of employment-related contract provisions by public school teacher unions pushes the bargaining position out along the contract curve in favor of teachers. This paper extends the Eberts and Stone paper to allow RIF provisions to be endogenous.

The Budget Allocation and Contract Negotiation Model

Three parties play important roles in allocating budgets and negotiating contracts in public school districts. Local taxpayers determine the total district operating levy; district administrators allocate the total operating levy to various budget categories; and teacher unions negotiate contracts, which include a variety of provisions, including RIF. The interaction between the budgeting and negotiating processes with respect to employment and salary decisions can be explored by focusing on the movement along the contract curve constructed in the wage-employment plane (Eberts and Stone, 1986). To derive the locus of efficient bargains, iso-utility curves for the budget officer and the representative union member are constructed.

Since the school district administrator is assumed to act as an agent for local taxpayers, the budgetary process can be represented by the median taxpayer's maximization problem. The taxpayer's utility is based on a vector of educational services (z) and a composite private consumption good (x). The taxpayer maximizes utility subject to his wealth (Y_o) and his share of total district education costs (c), in which a portion of the funds (s) come from outside the district, primarily in the form of state aid. Educational services are a positive function of the teacher/enrollment ratio (T/E_o) and other inputs (A/E_o).

The taxpayer's iso-utility curves can be derived in the wage-employment plane (w,T) by entering the production and budget equations in the taxpayer's utility function:

$$(1) \qquad V[z(T/E_o, A/E_o),\ Y_o - c(1 - s)(wT + aA)].$$

The goal of the teacher union is to maximize the wage bill (wT), while being sensitive to the employment status of its members:

$$(2) \qquad EU(w,T) = T(U(w) - \overline{U}),$$

where $\overline{U}$ is the utility received from the next best employment alternative. The utility function is assumed to be strictly concave, yielding downward-sloping convex indifference curves in the (w,T) plane.

The contract curve for efficient bargains is derived from the loci of tangencies of the union and taxpayer iso-utility curves. As McDonald and Solow (1981) theorize and Eberts and Stone (1986) demonstrate for teachers, movement along the contract curve away from the competitive position is achieved if the union has control over some aspect of the employment decision. For school districts, the presence of a RIF provision will presumably have a greater effect for teachers in districts facing declining enrollments than for teachers in districts with stable or growing enrollments.

Based on the simple model of the budgeting and negotiating process, a system of three equations is constructed. The first equation determines the total district operating budget. The second equation describes the internal allocation of the budget to teacher salaries. The third equation explains the appearance or disappearance of a RIF provision in a district contract.

Estimation Equations

Data

The endogenous continuous variables (and selected explanatory variables) in the model are specified as percentage changes over the five-year period from 1972 to 1976. Data were collected for public school districts in the state of New York. District finances and student characteristics were obtained from the New York Department of Education, and an analysis of contract provisions was provided by the state office of the New York State United Teachers (NYSUT). The NYSUT analysis included National Education Association affiliated districts as well as American Federation of Teachers (AFT) affiliated districts. Since all but a handful of districts in New York State engaged in formal bargaining during the time the data were selected, the sample considered in this study contained only unionized districts. The New York City public school system was purposely excluded from the sample because of its unusual size and unique behavior.

Estimation of the system of equations is performed on two subsamples. The first subsample contains districts that lost the RIF provision between 1972 and 1976 and districts that retained the provision. The second subsample contains districts that gained the RIF provision during the five-year period and those that never possessed it. Thus, estimates from the first sample show the budgetary effects of losing a RIF provision, while estimates from the second sample reveal the budgetary effects of gaining a RIF provision.

Total District Budget

As reflected in the taxpayer's optimization problem, the rate of change of the total district operating budget is a function of taxpayers' preferences and wealth and of changes in state and federal grants-in-aid. Community preferences are measured by the change in enrollment and a variable indicating whether the district is in a Standard Metropolitan Statistical Area (SMSA). Community wealth is recorded by the change in the assessed valuation per pupil in each district. The appearance or disappearance of a RIF provision records the possibility that administrators may pass increased costs of the collective bargaining variable on to taxpayers through higher tax levies.

In addition to the RIF provision, which is considered endogenous to the budgetary process, we included a measure of the general trend in negotiations included in a district. Although the RIF provision is expected to have the greatest impact on changes in teacher payrolls because of its influence on employment decisions, the presence or absence of other provisions provide an additional dimension of the relative bargaining strengths of unions and administrators. An index of negotiations is based on the status of each of 80 contract provisions between 1972 and 1976. Since the index includes a wide range of contract provisions, many of which are not related to budget or district conditions, it is assumed that the index is exogenous to the budget process.

Teacher Payrolls

The percentage change in teacher payrolls depends on the change in the total operating budget, the effect of the RIF provision, and a vector of exogenous factors. Community and district characteristics reflect differences in preferences and educational quality across districts. The change per pupil in the number of graduating seniors attending a four-year college and the change per pupil in the dropout rate measures the value that residents place on education. The change in enrollment and the school closure dummy variable capture the demand for educational services and the adjustments that districts make in response to changing demand. An SMSA variable accounts for differences in demand and supply between urban and rural teacher markets. Also included in the equation is the bargaining index, as described earlier.

Collective Bargaining

Whether or not a RIF provision is present in a collective bargaining contract depends on the relative bargaining strength of unions and district administrators and each party's perceived costs and benefits of negotiating a RIF provision. Thus, a union can successfully negotiate a RIF provision if a combination of factors are in the union's favor. If the costs to administrators of accepting a RIF provision are low and the benefits to the union are great enough to outweigh the costs of negotiating the provision, then the odds of the provision appearing in the contract are high. Bargaining strength would play a minor role in this case. On the other hand, if the costs to the administrator are high while the unions perceive substantial benefits from negotiating a RIF, then the odds of the provision appearing will depend on each party's relative bargaining strength.

Relative bargaining strength is reflected in the overall success of the local union in negotiating contract provisions, measured by the index described earlier. Costs and benefits to administrators and unions are measured by internal budget allocations to teacher payrolls, change in enrollment, change in the tax rate, and a dummy variable indicating school closure. The percentage of district contracts within the county that contain a RIF provision is also included. This neighboring-contract variable is intended to capture the local political and bargaining climates that affect bargaining outcomes by assuming that these factors affect the negotiations of all districts within the vicinity.

Results

The system of three equations is estimated following Heckman's

(1978) approach of including dummy variables in a system of simultaneous equations. The regression estimates are displayed by subsample in Table 1. The most striking result is that the coefficients of the teacher payroll variable in the RIF equations are not statistically significant. The estimates also show that neither enrollment changes

TABLE 1

Estimates of the Budget, Payroll, and RIF Equations

	Districts that:					
	Lost RIF or Retained It Equation:			Gained RIF or Never Had It Equation:		
Variables	Budget	Payroll	RIF	Budget	Payroll	RIF
		Endogenous:				
Budget	—	.510	—	—	.331	—
		(2.14)			(6.10)	
Payroll	—	—	1.54	—	—	−2.62
			(.18)			(.64)
RIF	−.103	−.070	—	.054	.024	—
	(2.49)	(1.91)		(3.07)	(1.64)	
		Exogenous:				
Enrollment	−.053	.002	−.081	−.136	−.257	−.683
	(.77)	(.03)	(.03)	(4.45)	(6.95)	(.35)
School closure	—	−.02	−.332	—	−.005	−.412
		(1.30)	(.41)		(.71)	(1.52)
Dropout rate	—	.001	—	—	.001	—
		(.37)			(.81)	
Grads attending college	—	1.33	—	—	.454	—
		(1.36)			(.98)	
SMSA (=1)	.023	.051	—	.001	.007	—
	(1.19)	(2.41)		(.17)	(1.04)	
Contract index	.101	.078	3.53	−.013	.002	4.24
	(2.27)	(1.82)	(2.16)	(.43)	(.08)	(4.50)
RIF in neighboring contract	—	—	−5.54	—	—	5.26
			(2.28)			(7.46)
Assessed valuation	.001	—	—	.001	—	—
	(2.79)			(8.59)		
Tax rate	—	—	−2.06	—	—	−2.37
			(.28)			(.85)
State aid	.001	—	—	.001	—	—
	(2.93)			(16.02)		
Federal aid	−.001	—	—	.001	—	—
	(1.23)			(2.01)		
District budget (1972)	—	.06	—	—	.07	—
		(1.58)			(4.48)	
Intercept	.18	−.35	−.09	.16	−.30	−2.8
	(5.24)	(1.19)	(.04)	(13.26)	(2.68)	(2.39)
R^2	.44	.41	.13	.46	.31	.15

Note: All variables are entered as differences unless otherwise noted. T-statistics are in parentheses. Miller's M^2 is used instead of an R-squared for the reduction-in-force (RIF) equation. SMSA = Standard Metropolitan Statistical Area.

Source: New York Public School Districts, 1972-1976.

nor school closures significantly affect a RIF. These findings are consistent with Kochan and Wheeler (1975), who found that economic events did not significantly affect bargaining outcomes.

The primary determinants of bargaining outcomes are found in factors that lie outside the realm of the local district administrator and budgetary decisions. This is evidenced by the significance of the neighboring-contract variable and the contract index variable. The signs of the neighboring-contract variable suggest that a district located in a county with a higher than average percentage of districts possessing a RIF provision is less inclined to lose the item and more inclined to gain it. The positive coefficient on the contract index variable indicates that the appearance or disappearance of the RIF provision follows the general trend of negotiation of other items in the district. The pertinent external factors proxied by the neighboring-contract effect could include characteristics of the legal and political environment, which were found by Kochan and Wheeler (1975) and Gerhart (1976) to be significant in their analyses.

While RIF provisions do have an impact on the internal budget allocation, the major impact of the RIF provision is on the total district budget. Budgets of districts that lost a RIF provision grew 10.3 percent slower than budgets of districts that retained a RIF, while budgets of districts that gained a RIF provision grew 5.4 percent faster than the budgets of districts that never had a provision. Apparently, the costs or savings due to contract agreements are passed on to the taxpayers and not simply internalized by the districts through budget reallocations.

The effect of the RIF provision on teacher payrolls and the total district budget varies according to whether the district gained or lost the provision. In the case of both teacher payrolls and district budgets, the impact associated with the loss of a provision is over twice as great as the impact attributed to the addition of the item. One explanation for the asymmetric results relates to the costs to administrators of allowing a RIF provision in the contract. Assuming that administrators have a strong influence on the bargaining process, it is likely that the administration will push to remove a RIF provision from the contract when economic conditions force a reduction in staff. Furthermore, a much smaller impact of a RIF on expenditures would be expected, assuming that the administration allows the inclusion of a RIF provision when its cost is not prohibitive.

Conclusion

This paper estimates the effect of local economic conditions, budgetary allocations, and bargaining strength on the ability of public teacher unions to raise teacher payrolls and influence total district expenditures. The efficient bargaining model suggests that employment-related contract provisions, such as RIF, can provide the means for unions to move out along the contract curve, extracting rents from the other party. However, this ability to capture rents may be mitigated by economic conditions and relative bargaining strengths of the two parties.

Results show that for public school districts in New York State during the mid-70s, the appearance or disappearance of RIF provisions from the collective bargaining contract had significant impacts on the rate of change of total district budgets and slightly less impact on the rate of change of teacher payrolls. However, neither the rate of change in internal budget allocations nor a change in enrollment significantly influenced the bargaining outcome. Thus, the results suggest that the rent-capture ability of public teacher unions is not influenced by district conditions or by internal budget allocations. The appearance or disappearance of the RIF provision is associated with bargaining strength proxies and the bargaining outcomes of neighboring school districts.

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DISCUSSION

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It did not strike me until I was on the airplane to this conference just how ironic it is that a seminar on rent capture by public sector employees is being sponsored by a group of Federal Reserve economists. As a large holder of the public debt, the Federal Reserve receives interest payments, deducts its operating expenses, and returns the residual to the Treasury. Combined with the fact that the Federal Reserve is the nation's largest employer of economists, the potential for rent capture is substantial, yet none of the papers exploit this source of data.

Brian Cromwell has written a solid and interesting paper that combines a distinctive funding source—dedicated taxes—with data on a rather homogeneous group of workers (bus drivers) to construct tests for rent capture. I do not doubt that Cromwell's central conclusions are correct: when dedicated taxes are enacted, union leaders are almost certainly pleased and consider it their job to gain a share of the revenues for their members. However, I do have some concerns about the methodology in the paper, and they fall into four categories: what is a rent; what is the appropriate dependent variable to test for rent capture; the costs of using fixed effects estimators; and, relatedly, how important is sample selection bias in this analysis.

The concept of a rent is fairly clear in a less than perfectly competitive product market, but it is murky in the context of a transportation authority that has several revenue sources that are aggregated to form an operating budget. Cromwell's Table 1 shows that transit systems with dedicated tax revenue also receive considerable funding from federal aid, state aid, and fares. Indeed, Cromwell notes that dedicated taxes were often instituted in order to qualify for federal aid. It simply isn't clear how to define a rent in this setting. Cromwell's focus on dedicated tax revenue stems from the fact that it is less variable or uncertain, but this is not the way a rent

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would typically be identified. In any case, the optimal use of a rent measure would be to include it explicitly as an explanatory variable on the right-hand side of the regression. The revenue variables and the year dummies Cromwell uses are proxies for a true rent measure.

Second, Cromwell uses both payroll expense and wages as dependent variables, but argues for emphasizing the former on the grounds that it captures both employment and wage effects from rent capture, and that the quality of the payroll data is superior to the wage data. While I agree with the data quality concern, I think that wages are the preferable dependent variable when testing for rent capture. Unions care about employment, but most of our models of union behavior suggest that the best test for rent capture is to be found in above market wages for union members. However, the results from Cromwell's wage regressions, found in Table 3, are not strongly supportive of the rent capture hypothesis. The coefficient on the private wage is far from one, the value that theory would suggest if the union was incorporating the market wage and then splitting rents. The coefficients on the dedicated tax revenue variables are much smaller than was the case when payroll was the dependent variable, and they are imprecisely estimated. Finally, there is no clear pattern of coefficients on the "years after enactment" variables, although they do generally rise over time.

Third, Cromwell correctly uses fixed effects estimates to remove the unobservable, time-invarient components from the model and presents specification tests to show that such a procedure is called for. While this is clearly an appropriate methodology to follow, the use of fixed effects eliminates the cross-sectional variance in the model. Since the cross-sectional variance in the characteristics of transit systems is quite large in Cromwell's sample (e.g., systems with dedicated taxes tend to serve areas that are more populous, have higher income and lower poverty rates, and much faster population growth rates), there is a large cost associated with examining only the within-system variance. While I am not advocating inconsistent estimates, I do think more could be done to try to model what Cromwell leaves as unobservables; are there proxies for the time-invarient variables that seem to be correlated with the regressors? If so, the observable, time-invarient demographic variables could also be used.

Finally, Cromwell acknowledges that a serious objection to the paper is that the adoption of a dedicated tax may be endogenous to the wage process, and hence the estimates of rent capture may be biased. Clearly this concern is closely related to the fixed effects problem, since if we knew more about why the taxes were adopted we might also learn something about the unobserved fixed effects. It is notable that dedicated taxes were adopted in only 18 states, and roughly half of the systems are in just four states. Cromwell cites restrictions on adoption in a few states, but the adoption process remains less than fully understood.

In sum, this paper makes a useful contribution to the empirical literature on public sector rent capture by focusing on the relationship between a unique funding source and a homogeneous group of workers. Its conclusions correctly warn against an overly sanguine view of dedicated revenues as efficient funding sources.

DISCUSSION

Paul F. Gerhart
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Randall Eberts' paper examines the relationships among the bargaining power ("rent-capturing ability") of teacher union locals in New York State, the budget allocation/payroll decisions in school districts, and the propensity for collective bargaining agreements to either "lose" or "gain" a reduction-in-force (RIF) provision between 1972 and 1976—the period covered by Eberts' data. The analysis is accomplished through two independent systems of three simultaneous equations where changes in total district budget (BUDGET), changes in total payroll (PAYROLL), and the "LOSS OF RIF" or "GAIN OF RIF" are the dependent variables. All three are assumed to be endogenous to the system.

Two systems of equations are used—one for districts that had RIF provisions at the beginning of the 1972-76 period, and one for districts that did not. Within the first set, districts that lost the RIF provision are compared with those that retained it. Within the second set, districts that gained the RIF provision are compared with those in which a RIF provision never appears.

My comments will focus on two results. The first is the relationship between "LOSS of RIF" or "GAIN of RIF" on the one hand, and BUDGET or PAYROLL on the other. The results in Table 2 show that (a) losing a RIF clause is associated with slower-than-average growth in both BUDGET and PAYROLL (t-ratios = 2.49 and 1.91, respectively); (b) gaining a RIF clause is associated with greater-than-average growth of BUDGET and PAYROLL (t-ratios = 3.07 and 1.64, respectively); *but* that PAYROLL changes have no significant effect on either losing or gaining a RIF clause.

Eberts expressed surprise that the PAYROLL coefficient was not significant in either RIF equation, but from my view, it is surprising that RIF was significant, or nearly so, in both sets of BUDGET and

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PAYROLL equations. I would anticipate no significant relationship whatsoever between RIF and the BUDGET and PAYROLL variables.

Typically, RIF provisions do not specify the numbers, types, or grades of employees on the payroll. Rather, they merely establish rules relating to which employees will be retained or laid off. Often a "seniority, if qualified" type of rule exists. In education, state certification for specific subjects is usually required, e.g., high school math, driver education, K-6. Thus, junior teachers with the required certification are often retained while their senior colleagues are laid off.

The presence of a RIF provision in a contract should therefore have no effect on the level of employment for teachers in a district.[1] The only effect a typical RIF provision could have on payroll would result from the fact that teacher salary schedules usually require higher salaries for teachers with more years of service. Therefore, if a substantial layoff occurred within a district, and it was subject to a seniority RIF rule, it is likely that the average teacher salary would rise.

If this is what were happening in the Eberts equations, however, the strength of the relationship between RIF and PAYROLL should be stronger than that between RIF and BUDGET since average teacher salary is a much more important driver of PAYROLL than it would be of BUDGET. The results show the opposite, however. Moreover, observation of this phenomenon in the statistics should be unlikely because the downward impact on payroll resulting from a reduction in the number of teachers would certainly overwhelm any upward impact caused by the increased average teacher salary.

An alternative model is that a general decline in union bargaining power, due in part to slower than average growth of school district revenue, leads to a loss of favorable contract language from the agreement, including a RIF clause. The CONTRACT INDEX variable is a highly significant explanatory variable for RIF in both systems of equations.[2] In effect, what is proposed here is a model where BUDGET is not endogenous but is an exogenous cause of the loss of RIF through the CONTRACT INDEX variable.

The second set of results worthy of special note is the nonrelationship of ENROLLMENT and SCHOOL CLOSING to the gain or loss of RIF clauses. In general, the "cost" to the district and the "benefit" to the union of a RIF clause are likely to rise or fall together. As enrollments are declining, the cost and benefit of such a clause rises for the respective parties. Where, on the other hand, enrollment is stable or rising, school administrators and teachers will presumably be indifferent about a RIF clause because it affects nothing.

Since there is a symmetric increase in the district's desire to avoid, and the union's desire to obtain, a RIF clause, the nonsignificance of ENROLLMENT and SCHOOL CLOSING should perhaps not be surprising. The key intervening variable is, of course, relative bargaining power. The absence of significance for ENROLLMENT and SCHOOL CLOSING as the equations have been structured by Eberts suggests that bargaining power is not systematically related to declining enrollments or school closings.[3]

A more direct investigation of this conclusion, however, is necessary. Since there are likely to be two models at work depending on whether enrollments are declining or school closings are threatened, it would be useful to split the sample on one of these bases before the effect of bargaining power is investigated. As a hypothesis, I anticipate that in the districts where enrollment is declining, direct measures of power as reflected in the CONTRACT INDEX variable will predict what happens to RIF clauses. Where enrollment is stable or rising, I anticipate that a less direct measure of power such as the pattern of neighboring contracts, will be a better predictor of RIF.

Despite the questions raised above, this paper must be given great credit for calling our attention to the complexity of the relationships it investigates. Simple models are not likely to explain much. More complex contingency models like the one proposed by Eberts will undoubtedly be more fruitful.

Endnotes

[1] One can imagine a situation where a principal, faced with a declining need for chemistry teachers and a seniority RIF clause, might choose to keep both a less popular senior teacher as well as a very popular junior teacher in order to avoid laying off the junior teacher. Such situations are probably too rare to affect statistical results, however.

[2] Note that CONTRACT INDEX is a "difference variable" reflecting the amount of change in the agreement. In the first set of equations it is the ratio of "lost/retained" contract clauses, so the larger the ratio, the greater the loss of union bargaining power. In the second set the opposite is true, so the larger the ratio, the greater the gain in union bargaining power.

[3] This is not entirely consistent with the earlier suggestion that bargaining power might be influenced negatively by a declining budget. I am unaware of any evidence elsewhere that relates district budgets and enrollment changes to bargaining power.

IX. NLRB RULEMAKING: HAS ITS TIME COME?

NLRB Rulemaking: Promise and Prospects

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Three years ago I raised a question: "The NLRB in the Dog House—Can an Old Board Learn New Tricks?"[1] Featured among the new tricks was substantive rulemaking under the Administrative Procedure Act (APA). The timing was ripe for a positive response, for the National Labor Relations Board (NLRB), relying upon its half-century old practice of promulgating rules in adjudicated cases, had been trying unsuccessfully to define bargaining units in the health care industry for 13 years. It was now ready to try APA rulemaking. Accordingly, over a period of two years it conducted extensive hearings, received hundreds of written commentaries, and finally, in April 1989, issued a rule defining the basic units in the health care industry. A year later the Seventh Circuit Court of Appeals affirmed both the rulemaking process and the resulting rule.[2]

Assuming that it has the courage to continue the process, the Board has now opened an exciting new era in NLRB history, for APA rulemaking can rejuvenate that agency by providing a more efficient means to implement Congressional labor policy. It should be remembered that Congress, from the beginning, intended for the Board to promulgate substantive rules through non-adjudicatory procedures.[3]

In 1969 the Supreme Court, in its *Wyman-Gordon* decision,[4] gave the Board an unsettling reminder of its rulemaking capability. It found that the Board had violated the APA by promulgating, in an

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adjudicatory proceeding, its rule requiring employers to make available to petitioning unions the names and addresses of bargaining unit employees prior to representation elections.[5] Later, however, in *NLRB v. Bell Aerospace Co.*,[6] the Court dispelled the confusion which had been created by its several *Wyman-Gordon* opinions, declaring that the "choice between rulemaking and adjudication lies within the Board's jurisdiction,"[7] although "there may be situations where the Board's reliance on adjudication would amount to an abuse of discretion or a violation of the Act."[8] When it became apparent from *Bell Aerospace* that the APA did not mandate broad rulemaking, the board returned to its old habit of promulgating substantive rule-changes in adjudicated cases. What it failed to recognize—or chose not to acknowledge—was that even in situations where the law does not mandate APA rulemaking, such rulemaking can often provide a better choice for achieving long-range statutory objectives.

Adjudication and Rulemaking Distinguished

To understand and appreciate the rulemaking process, one must recognize the separate functions that Congress typically assigns to an administrative agency, particularly the dual functions of *rule-making* and *adjudication*.[9] Under the National Labor Relations Act (NLRA), the Board's adjudicatory and rulemaking functions are well delineated, for Congress enacted relatively brief substantive statutory provisions, clearly intending for the Board to fill in the details as to what types of conduct should constitute the defined unfair labor practices and how the representation election process should operate. The fact that the Board has traditionally chosen to announce its substantive rules in the course of deciding cases involving specific parties does not avoid either the need for substantive rules or the reality that the Board regularly promulgates such rules. But by promulgating them in the course of adjudication, the Board gives the superficial appearance of merely deciding cases, which is essentially a judicial process, when in reality it is making law, which is essentially a legislative process.

Although I have long advocated the Board's use of substantive rulemaking, I have never advocated the *exclusive* use of that process. There are many areas of Board law where adjudication is preferable, particularly where the Board's own experience and the need for a flexible or evolutionary approach are paramount concerns. But in areas where the Board has, or should have, a firm and fixed rule of broad application, APA rulemaking, with its notice-and-comment procedures, will ordinarily be a superior method for arriving at, and announcing, rules.

Advantages of APA Rulemaking Over Adjudicatory Rulemaking

Rulemaking Improves the Board's Data Sources

Notice-and-comment rulemaking offers a fair and orderly means for the Board to gather empirical data, consider diverse opinion and argument, and investigate what is really happening in the typical workplace—not just what happened once in one workplace. And rulemaking supplies the ideal forum for the receipt of expert testimony. In adjudicated case hearings, such testimony is ordinarily either inappropriate or unavailable.

Congress intended for the Board to be expert in its field, and the Courts are expected to defer to the Board's expertise in areas of policy. But such expertise is often a myth. To be truly expert, Board members must be able to inform themselves with sufficient data, including empirical studies, and also be able to hear the representative voices of all potentially affected groups.

Rulemaking Emphasizes Policy Rather Than Fact-Specific Situations

Precisely because American industrial relations is in a stage of transition, it is important that the full potential of the NLRA be brought to bear upon burgeoning problems. Some rule changes ought to be effected when needed, not merely when the Board happens to announce the change in a case long after it has been heard. Too often the Board has altered a rule without sufficient regard for the circumstances of the parties who were operating under the rule when the case arose, and without affected parties having had an opportunity to tailor their legal presentations to the rule-changing mode.[10] In contrast, APA rulemaking gives any interested party, as well as the General Counsel and the Board itself, an opportunity to bring to the Board's attention the need for a rule change.

Rulemaking Disseminates Critical Information

The NLRA was originally enacted to provide opportunities and protections for employees during union organization and collective bargaining, and those objects have remained central to the statute throughout its several amendments.[11] Employees, therefore, have a special need to know what their rights are under the Act, as do their employers. Such knowledge is particularly important regarding pre-organizational conduct, for employees have a protected right to engage in such conduct and in other concerted conduct for "mutual aid or protection." Although such conduct is protected by the Act,[12] few employees are aware of, much less understand, the rights and duties which the Act actually confers.[13] Clearly stated substantive rules, including a rule requiring the posting of the basic provisions of the NLRA, would make that statute more meaningful for those who could or should be affected. There is a similar need for dissemination of information about rules which could affect employees who do not have access to, or the desire for, union assistance.

Labor law is more esoteric than it need be. Removing key rules from cases and stating and disseminating them in a form which lay people can read and understand would help to demystify the statute. The NLRA need not be the exclusive domain of specialist labor lawyers.

Rulemaking Provides Better Articulation of Reasons for a Rule

The APA requires the agency to explain the "basis and purpose"[14] of a rule, and such explanation must satisfy judicially imposed standards of adequacy. The agency "must articulate a satisfactory explanation for its action[,] including 'a rational connection between the facts found and the choice made.'"[15] And because the explanation will relate to statutory policy and general data rather than to specific facts of a single case, the APA "basis and purpose" standard makes it more likely that the agency will provide reasons which can be justified within the text and policy of the statute.

The judicial requirement that an agency justify reasons for altering an established rule can be of particular importance to the NLRB, which has long suffered from the vicissitudes of changing political administrations and the resulting turnover in Board membership. This opening of the process should have a stabilizing effect on the law. Under rulemaking, rule changes may not occur as frequently as they have in the past, but when they do, they will be more likely to endure.

Rulemaking Enhances Predictability

To the extent that the Board engages in APA rulemaking, the labor relations community will be provided with a reliable statement of the law. With such knowledge, a party can avoid the trap which heretofore occurred whenever a relevant rule was suddenly changed in another pending case—or even in the party's own case. Under APA rulemaking, when the Board changes a rule the effect of the new rule will be prospective, not retroactive.

Rulemaking Reduces Litigation and Administrative Delay

Inasmuch as a substantive (or legislative) rule eliminates the need to adjudicate the facts on which a rule is based, the process of litigating a case involving such a rule becomes less redundant. And with fewer opportunities or incentives to test the limits of the law through adjudication, parties will be more likely to comply with established law and settle more cases without hearings. But even when an adjudicated case receives the full panoply of a hearing, the review process will move more swiftly because of the certainty which an underlying legislative rule imparts.

Rulemaking Optimizes Agency Resources

Rulemaking utilizes agency time and personnel more efficiently. It is not efficient to reinvent the wheel whenever the same situation arises in contested cases. The rulemaking process normally will not require extensive utilization of time. The APA only requires notice and an opportunity for interested parties to comment; it does not mandate oral hearings.[16] It is for the agency to determine how much and what type of procedure is appropriate when it chooses to exercise its rulemaking authority.[17] The Board can thus determine what kind of proceeding will be most productive and efficient for the rule in question. Time saved by Board personnel as a result of a reduced complaint ("C") case docket and a streamlined representation ("R") case procedure could be better spent for other purposes.

Rulemaking Avoids the General Counsel Barrier and a Due Process Problem

Some rules either cannot be appropriately changed by adjudication or cannot be thus changed without raising substantial problems of administrative due process. Because no unfair labor practice case can reach the Board unless the General Counsel first issues a complaint,[18] many settled issues are unlikely to surface in an adjudicated case and therefore are unlikely to be addressed anew by the Board. One such example of this General Counsel barrier is the familiar *Mackay* rule,[19] which allows economic strikers to be permanently replaced. There are a number of reasons why many within the labor relations community would like to modify that rule, but the appropriate case for adjudicatory modification is not likely to arise because of the General

Counsel barrier; an unfair labor practice charge contesting permanent strike replacements would normally be dismissed by the General Counsel in deference to the *Mackay* rule. But even if such a case were to reach the Board and the Board decided to change that rule, the potential for back-pay liability against an employer who had relied on the prior rule would be so great that the due process problem which the Supreme Court raised in its *Bell Aerospace* caveat[20] would prevent the Board from giving retroactive effect to a new or modified rule.

Rulemaking Improves the Appellate Process

One reason the Board has fared so poorly on appellate review is that whenever substantive rulemaking has occurred in the context of an adjudicated case, the rule in question, which was intended for broad application, has been invariably compromised by the specific factual context in which it has been applied. Little wonder that endless debate rages over the scope and standard of appellate review in such cases, for the standard of review applicable to administrative fact-finding[21] differs widely from the standard applicable to an agency's interpretation of its enabling statute and the substantive rules which it devises to implement that statute.[22] But probably the main reason the Board is so often reversed on appeal is that it simply lacks credibility. The Courts are expected to defer to the Board's expertise, but without an adequate data base to support its rationale for a substantive rule change, the Board is more likely to be reversed and the case remanded. APA rulemaking would substantially improve the Board's credibility in the appellate courts. Additionally, the process would provide greater uniformity in the law, for APA rules, unlike rules in adjudicated cases, are less likely to be subjected to multiple review among the Circuits.

Rulemaking Fosters the Prevention of Unfair Labor Practices

When Congress wrote the enforcement section of the Act, it entitled the provisions "Prevention of Unfair Labor Practices."[23] But unlike most other remedial statutes, this Act does not command widespread voluntary compliance, and the Board has been singularly unsuccessful in preventing basic unfair labor practices from occurring.[24] The existence of clear rules defining what is protected and what is prohibited would encourage the former and deter the latter. Similarly, clear rules defining basic bargaining units and standard procedures regulating the election process would reduce the incidence of "R" case hearings.

Rulemaking Provides a Rational Means to Achieve Necessary Interstitial Lawmaking

As previously noted, Congress drafted the Act with the sparsest of language, leaving to the Board "the task of filling the interstices of the broad statutory provisions."[25] APA rulemaking, with its capacity for receipt of wide input from constituent communities, is ideally suited for this process of interstitial lawmaking.

Rulemaking Assists in Congressional Oversight

Congressional oversight operates with greater precision where agency action can be unambiguously identified, as it can be when an agency expresses its major policy determinations in the form of rules rather than in decisions relating to individual cases.

The Prospects for Rulemaking

Invocation of the Process

The rulemaking process can be initiated by the Board, the General Counsel, or by any other "interested person."[26] In compliance with the APA, the NLRB has a procedural regulation which provides for such petitions,[27] though it has probably never yet been used for a substantive rule change. Now that the rulemaking ice has been broken, that regulation may see some use. If groups within the labor relations community maintain an active interest in the Board's use of rulemaking, and if they present constructive petitions for rulemaking—perhaps even supported by empirical data at the early petition stage—the Board's movement toward a rulemaking system may be accelerated.

Areas Suitable for Rulemaking

It may be useful to indicate some of the subjects which I consider prime topics for substantive rulemaking. Although I have bracketed these potential rules into traditional "R" and "C" case categories, they could also be divided into three other groupings, for there are three types of rules especially suited for APA promulgation: (1) *need-to-know rules*, (2) *law-changing rules*, and (3) *law-codifying rules*. Need-to-know rules are of the type which I discussed with reference to the dissemination-of-information function; law-changing rules are just that; and law-codifying rules are established rules derived from adjudicated cases which should perhaps be codified as identifiable legislative rules in order to make them more accessible.[28]

The following are my candidates for future NLRB rulemaking:

Representation and Election Rules

Bargaining unit rules, most of which have been standardized for many years, are well suited for rulemaking. They group primarily into two types: mandated units and presumptive units. Another category of "R" case rules which would be appropriate for rulemaking are *pre-election rules*. These would include rules advising the parties about permitted and proscribed conduct relating to pre-election activity, including *Excelsior*[29] list requirements, the *Peerless Plywood*[30] 24-hour rule relating to captive audience presentations prior to an election, and prohibitions on electioneering at the polling place.[31]

Unfair Labor Practice Rules

A General Posting Rule. In order for employees to know of their basic rights under the Act, the Board should promulgate a rule, enforceable pursuant to Section 8(a)(1), requiring all employers and labor unions subject to the Board's jurisdictional standards to post in employee areas a specified notice describing the basic rights, duties, and procedures provided by the statute and also the Board's major substantive rules. This notice would also advise how to contact the nearest Board office and include an "800" telephone number.

Rules Relating to Organizational Activity

Rules defining pre-organizational and organizational rights and responsibilities under Section 7; this is critical information that employees need. These rules would include: (1) definitions of protected concerted activity, (2) permissible no-solicitation limitations, (3) permissible restrictions relating to employee and union access to areas that may be used for organizational purposes, (4) limitations relating to employer interrogation and polling, and (5) rights and responsibilities relating to threats and promises of benefit.[32]

Section 8(a)(2) Rules

Rules defining labor organizations and limitations on employer support of such entities, including grievance plans and committees, should be promulgated so that they may be readily available to employees in nonunion work places[33] because those plans and committees may be subject to the unfair labor practice requirements of Section 8(a)(2). For the same reason, employees and employers should be apprised of the Act's employee-majority requirement, which the Supreme Court emphasized for Section 8(a)(2) purposes.[34]

Other Suitable Unfair Labor Practice Rules

I would also include the following additional topics because they qualify either as *need-to-know* rules or *law-changing* rules: (1) *Weingarten*[35] rules; (2) rules defining employee rights regarding hiring halls,[36] union security,[37] and strikes;[38] (3) a rule defining mandatory bargaining requirement relating to managerial decisions affecting employees;[39] (4) modification of the *Mackay*[40] rule; and (5) reconsideration of various "permissive" constructions of the statute, including the interpretative rules contained in *Linden Lumber*[41] and *Pattern Makers*.[42]

Conclusion: Future of NLRB Rulemaking

The Board has demonstrated that it can indeed learn new tricks. The health care unit rule is a promising beginning, but merely a beginning. Although the transition to APA rulemaking can only proceed a step at a time, the process has begun and it is not likely to be reversible. Because rulemaking is an opening-up process, once the benefits are realized the Board's constituents are not likely to silently allow the agency to return to its old ways. If the Board on its own does not continue to employ rulemaking, I would expect various "interested persons" to provide appropriate stimuli in the form of petitions for rules and rule modifications. The opening-up process cannot easily be contained. Just as President Gorbachev has learned that there is no such thing as a little bit of democracy, the Labor Board may learn that there is no such thing as a little bit of rulemaking. I am optimistic about this old Board's future.

Endnotes

[1] Morris, *The NLRB in the Dog House—Can an Old Board Learn New Tricks?*, 24 San Diego L. Rev. 9 (1987). Detailed references for many of the items discussed in this paper are found in this article.

[2] Judge Posner, writing for the court, noted that "the exercise of the Board's dormant rulemaking is long overdue." American Hosp. Ass'n v. NLRB, 1990 U.S. App. LEXIS 5446, April 11, 1990.

[3] 29 U.S.C. §156 (1982).

[4] *NLRB v. Wyman-Gordon Co.*, 394 U.S. 759 (1969).

[5] Excelsior Underwear, Inc., 156 NLRB 1236 (1966).

[6] 416 U.S. 267 (1974).

[7] *Id.* at 293.

[8] *Id.* at 294.

[9] A third function, *executory* in nature, concerns law enforcement (primarily investigations and prosecutions, which under the NLRA are assigned to an independent General Counsel).

[10] *E.g.*, *see* Mesa Verde Construction Co. v. Northern Cal. Dist. Council of Laborers, __F.2d__, 114 CCH LC ¶12,054 (9th Cir. 1990), refusing retroactivity to the rule promulgated in John A. Deklewa & Sons, 282 NLRB 1375 (1987).

[11] *See generally*, Morris, *supra* note 1, at 11-17.

[12] 29 U.S.C. §§157 & 158(a)(1) (1982).

[13] *See generally*, Morris, *NLRB Protection in the Nonunion Workplace: A Glimpse at a General Theory of Section 7 Conduct*, 137 PA. L. REV. 1673 (1989).

[14] 5 U.S.C. §553(c) (1982).

[15] Atchison, Topeka & Santa Fe Ry v. Wichita Bd. of Trade, 412 U.S. 800, 807-08; Motor Vehicle Mfrs. Ass'n of the U.S., Inc. v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983).

[16] 5 U.S.C. §553(e).

[17] Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc., 435 U.S. 519 (1978).

[18] *See* Vaca v. Sipes, 386 U.S. 171, 182 (1967).

[19] NLRB v. Mackay Radio & Tel. Co., 304 U.S. 333 (1938). Ironically, the rule was never even promulgated by the Board in an adjudicated case; it was derived from the Supreme Court's dictum in *Mackay*. *See* Morris, *supra* note 1, at 36-38.

[20] *See supra* note 8 and accompanying text.

[21] *See* NLRB v. Universal Camera Corp., 340 U.S. 474 (1951).

[22] *See* NLRB v. Food & Commercial Workers, 108 S.Ct. 413 (1987); Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc., 480 U.S. 421 (1987); NLRB v. J. Weingarten, Inc., 420 U.S. 21 (1975).

[23] 29 U.S.C. §160 (1982).

[24] *See* Morris, *supra* note 1, at 17-22.

[25] *Beth Israel Hospital v. NLRB*, 437 U.S. 483, 501 (1978).

[26] 5 U.S.C. §553(e) (1982).

[27] 29 C.F.R. §102.124 (1989).

[28] Some, but not all, such rules are also of the need-to-know type.

[29] *See* Excelsior Underwear, Inc., 156 NLRB 1236 (1966).

[30] Peerless Plywood Co., 107 NLRB 427 (1953).

[31] Alliance Ware, Inc., 92 NLRB 55 (1950).

[32] *See generally*, C. Morris, 1 THE DEVELOPING LABOR LAW, Chapter 6 (2d ed. 1983) and Supplements.

[33] Section 2(5) of the Act, 29 U.S.C. §152(5) (1982), broadly defines "labor organization" to include a plan or committee in which employees participate for certain purposes, including dealing with the employer concerning grievances.

[34] Ladies Garment Workers v. NLRB (Bernhard-Altmann Texas Corp.), 366 U.S. 731 (1961).

[35] NLRB v. J. Weingarten, Inc., 420 U.S. 21 (1975).

[36] *See* Local 357, Teamsters v. NLRB, 365 U.S. 667 (1961).

[37] *See* Beck v. Communications Workers, 108 S.Ct. 2641 (1988).

[38] *See* Pattern Makers' League of N. Am. v. NLRB, 473 U.S. 95 (1985).

[39] *See* First National Maintenance Corp. v. NLRB, 452 U.S. 666 (1981); Otis Elevator Co., 269 NLRB 891 (1984); Food & Commercial Workers v. NLRB (Dubuque Packing Co., Inc.), U.S. Ct. of App., D.C. Cir., Lexis 11388 (decided Aug. 4, 1989).

[40] NLRB v. Mackay Radio & Tel. Co., 304 U.S. 333 (1938).

[41] Linden Lumber Div. v. NLRB, 419 U.S. 301 (1974).

[42] Pattern Makers' League of N. Am. v. NLRB, 473 U.S. 95 (1985).

The Road to Rulemaking? Unit Determination in the Health Care Industry

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Ever since the 1974 extension of the National Labor Relations Act (NLRA) to nonprofit hospitals, the National Labor Relations Board (NLRB) and the courts have wrestled with the appropriate bargaining unit issue. Thirteen years of litigation did not resolve this controversy, and in 1987 the NLRB made an unprecedented, and historic, decision to use its rulemaking powers to determine health care units. This paper analyzes the events leading to rulemaking, describes the content and process of rulemaking, and discusses events after announcement of the final rules.

Background

The impact of unit proliferation on patient care was an issue in Congress prior to the 1974 amendments (*Legislative History* 1974, 113). Senator Taft (R-Ohio) explained as follows:

> Hospitals and other types of health care institutions are particularly vulnerable to a multiplicity of bargaining units due to the diversified nature of the medical services provided patients. If each professional interest and job classification is permitted to form a separate bargaining unit, numerous administrative and labor relations problems become involved in the delivery of health care.

The labor relations problems identified were medical cost increases due to wage "leapfrogging" and patient care disruptions

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resulting from jurisdictional disputes and strikes (*Legislative History* 1974, 114). Although it is central to the controversy, there is no published evidence, other than anecdotal, of a relationship between bargaining unit numbers and these negative industrial relations outcomes.

The final amendments did not include unit determination standards. However, the accompanying Senate Committee Report recommended "due consideration should be given by the Board to prevent proliferation of bargaining units in the health care industry" (*Legislative History* 1974, 12). The interpretation of this admonition is at the heart of the health care unit controversy. The terms "due consideration" and "prevent proliferation" are vague and subject to many interpretations. A related issue is how to weigh legislative history when interpreting laws.

Underlying Issues

Although the health care unit issue focuses on this admonition, the primary cause of litigation is the importance of the issue to the parties. The NLRB unit decisions determine election units, which can affect election outcomes. Research indicates that unions win more elections in small hospital units than in large ones (Schwarz and Koziara, 1987; Delaney and Sockell, 1988). Therefore, both employers and unions have incentives to jockey for favorable units.

Second, unit determination affects bargaining relationships and the administrative issues faced by unions and employers. Heterogeneous units can add complexity to union administration. For employers, in contrast, a few large units create fewer administrative and negotiating burdens than do numerous small units.

Hospital employers have additional litigation incentives. Litigation delays elections which reduces the likelihood of union victory (Heneman and Sandver, 1983). Unit litigation also can delay bargaining even after a union election victory. Since unit decisions can not be appealed directly to the courts, employers challenge such rulings by refusing to bargain with the certified union. The union may then file refusal to bargain charges. This process delays negotiations until an appeals court resolves the unit issue and enforces a bargaining order.

The Road to Rulemaking

Section 9(b) of the NLRA gives the Board authority to determine appropriate units "in each case . . . to assure to employees the fullest freedom in exercising the rights guaranteed by this Act. . ." (NLRA 29, U.S.C. §159(b). The NLRB relies heavily on worker community of interests, including such factors as similarities in skills and working conditions, worker interchangeability, employer structure, and bargaining history to determine units (Taylor and Whitney, 1987).

When determining hospital units in the 1970s, the Board frequently referred to avoiding undue proliferation but frequently used traditional community-of-interest standards. The Board explained in *Allegheny General Hospital*, "If Congress had wanted to preclude the Board from using traditional criteria in making unit determinations in the health care industry, it could have easily amended Section 9(b)" (239 NLRB 872 [1978], p. 873).

The Board's use of community-of-interest standards did not, however, get clear judicial approval. Some appeals courts found that community-of-interest standards did not sufficiently address legislative history and the unit proliferation admonition (See, e.g., *Mary Thompson Hospital*, 241 NLRB 766 [1979], enforcement denied, 621 F.2d 858 [1980]; *Allegheny General Hospital*, 239 NLRB 872 [1978], enforcement denied, 608 F.2d 965 [1979]; and *West Suburban Hospital*, 224 NLRB 1349 [1976], enforcement denied, 570 F.2d 213 [1978].)

The St. Francis cases (*St. Francis I*, 112 LRRM 1153 [1982] and *St. Francis II*, 116 LRRM 1465 [1984]) illustrate the different standards used by the NLRB and the courts to balance employee access to collective bargaining and undue unit proliferation. In *St. Francis I* the NLRB, using community-of-interest criteria, approved a separate unit for the St. Francis maintenance employees.

The Board used this case to introduce a two-tier standard with eight potentially appropriate units: (1) registered nurses; (2) physicians; (3) other professionals; (4) technical employees; (5) business office clericals; (6) service and maintenance employees; (7) skilled maintenance employees; and (8) guards. These units would be appropriate if "the requisite community of interest to warrant separate representation" existed (*St. Francis I*, 1982, p. 1157). Narrower units would get approval in "extraordinary and compelling" circumstances.

Two dissenting members favored a disparity-of-interest standard of two presumptively appropriate units other than the NLRA-mandated separate unit for guards: (1) professionals; and (2) nonprofessionals. Only when employees have a "notable disparity of interests" from employees in these units would a smaller unit be appropriate (*St. Francis I*, 1982, 1167).

In 1984 the Board, reconsidering its earlier decision, adopted the disparity-of-interest standard and denied the maintenance employees a separate unit (*St. Francis II*). The Appeals Court rejected both the disparity-of-interest criteria and the presumed appropriateness of two broad "wall-to-wall" bargaining units (*International Brotherhood of Electrical Workers, Local Union No. 474 v. NLRB*, 814 F.2d 697 [1987]). It found the Board's reliance on the proliferation admonition, rather than on the wording of the 1974 amendments, to be an inaccurate reading of Congressional intent, and remanded the case to the NLRB. On remand, the NLRB again ruled against a separate maintenance unit. It explained that the disparity-of-interest standard was not based on legislative history, but was designed to effectuate the purposes of the NLRA (*St. Francis III*, 286 NLRB 123).

The *St. Francis* cases raised hospital unit determination to new levels of confusion. Neither the disparity-of-interest nor community-of-interest standards had won consistent NLRB and court approval, and no end to the ongoing litigation was in view. Moreover, as of 1989, 10 years after voting for union representation, the St. Francis Hospital maintenance workers still did not have access to collective bargaining. It is in this context that the NLRB began the rulemaking process.

NLRB Rulemaking

Section 6 of the NLRA provides the Board with the ability to make rules (NLRA 29 U.S.C. §156). Despite calls to do so, the NLRB made little use of this power prior to its 1987 decision to develop health care unit rules (Morris, 1987; Subrin, 1981). The NLRB identified three major reasons for beginning rulemaking. First, the extensive litigation had not resulted in either clear court acceptance or standards for the NLRB to use in the future. The lack of standards encouraged litigation and delayed employee access to collective bargaining. Second, litigation is costly for the parties and for the NLRB. Third, the burden placed on resources seemed particularly unwarranted given the Board's experience with health care units.

The Board explained, "Laborious, costly, case-by-case recordmaking and adjudication in this remarkably uniform field had proved to be an unproductive expenditure of the parties' and taxpayers' funds." The Board predicted that rulemaking might be time consuming, but would have "dividends in the form of predictability, efficiency, and more enlightened determinations as to viable appropriate units, leading ultimately to better judicial and public acceptance" (NLRB 1987, 25144). The NLRB noted that occupational groups are similar in most hospitals, and the extent to which cases differed appeared "largely the result of counsels' skill or determination" (NLRB 1987, 25144).

The Board's goal in defining health care unit rules was to balance the presumed negative effects of unit proliferation and the right of employees to join co-workers having similar interests to bargain collectively. To begin rulemaking, the Board made public a draft of proposed rules in July 1987.

The proposal outlined six units for hospitals with 100 or more beds and four units in hospitals with fewer beds (NLRB 1987, 25146). The six large hospital units were: (1) registered nurses; (2) physicians; (3) other professional workers; (4) technical employees; (5) service, maintenance and clerical employees; and (6) guards. The proposed rules for small hospitals were similar except for the inclusion of nurses and physicians in an all-professional unit.

The major deviation from past Board practice was the inclusion of maintenance workers, business office clerical workers, and service workers in one unit (NLRB 1987, 25147). Previous Board decisions frequently provided separate units for each occupational grouping.

The rulemaking process took about two years from the Board's original announcement until the publication of final rules. During this period, the Board held public hearings in several locations for interested parties to present testimony. The Board requested people to present evidence about the impact of unit proliferation rather than to simply rehash familiar arguments. About 315 people provided testimony.

Unions generally supported rulemaking, but argued for eight units and for rules that would permit the employees they represent to have distinct units. For example, the American Nurses Association testified that due to their professional identity and working conditions, nurses should have separate units (BNA 1987, No. 158 F-1, A-8).

The American Hospital Association (AHA) and other hospital management representatives argued that the Board lacked authority to make unit rules because Section 9(b) requires the Board to determine the appropriate unit *in each case*. It was also suggested that the hospital industry was unfairly singled out for rulemaking, that the proposed rules conflict with the unit proliferation admonition, and that the result would be increases in organizing, strikes, jurisdictional disputes, and other health care disruptions (NLRB 1989, 16336).

Hospital representatives advocated a maximum of three units: (1) professionals; (2) nonprofessionals; and (3) guards. These inclusive units would permit the staffing flexibility important to employers because of the rapidly changing delivery of health care services, increased functional integration of hospitals, and movement to patient care teams. Flexibility was seen more as compatible with case-by-case decisions than with rules (BNA 1987, No. 179, A-2).

The NLRB announced revised rules in July 1988. The revisions placed skilled maintenance workers, business office clericals, and other nonprofessionals in three separate units rather than in the originally proposed inclusive service, maintenance, and clerical unit. The Board noted that skilled maintenance workers had a tradition of separate representation and different training and working conditions than unskilled workers. It stated that business office clericals have distinct working conditions and supervision and little interaction with other hospital employees (NLRB 1988, 33911-33927). The modified rules did not distinguish between large and small hospitals.

In April 1989, the Board announced final rules which outlined eight appropriate units: (1) registered nurses; (2) physicians; (3) all other professionals; (4) technical employees; (5) skilled maintenance employees; (6) business office clericals; (7) all other nonprofessionals; and (8) guards. The rules excluded nursing homes and psychiatric and rehabilitation hospitals. Exceptions to the rules were provided for extraordinary conditions and existing nonconforming units. For example, proposed units with five or fewer employees would automatically qualify as an extraordinary condition (BNA, 1989, 14).

After Rulemaking

Litigation testing the validity of the NLRB's new rules began almost immediately. In April 1989, the AHA requested and won an injunction to prevent enforcement of the rules. The AHA argued that the rules were not valid because: (1) the NLRA requires the NLRB to make unit decisions "in each case"; (2) the 1974 amendments require the Board to avoid undue unit proliferation; and (3) the rules are arbitrary, capricious, and not supported by evidence (*AHA v. NLRB*, 1989, 2).

The court ruled that the NLRA does not preclude the Board from unit determination rulemaking. It found, however, that a rule designating an absolute number of units is not responsive to Congressional concerns about unit proliferation (*AMA v. NLRB*, 1989, 28-9). Although the decision alluded to the importance of avoiding unit fragmentation, it presented no evidence that multiple units negatively affect health care. In light of the litigation on this issue, and its delay of elections and negotiations, it is ironic that the court stated, "It is fair to say that individualized determination of bargaining units will better assure employees the fullest freedom in exercising . . . (their) rights" (*AHA v. NLRB*, 1989, 20). The NLRB, joined by the AFL-CIO and the American Nurses' Association, appealed the injunction to the Seventh Circuit and requested an expedited process, which was denied.

Conclusions

The history of the appropriate unit issue in the health care industry shows how ineffective public policy can result from the three branches of government working at odds with one another. The problem began when Congress sent an ambiguous message to the NLRB about health care unit determination. The NLRB's efforts to resolve the resulting tensions between legislative history and statutory language were often rebuffed by the courts. In its latest effort to gain judicial acceptance and clear up this controversy, the NLRB used its long-dormant rulemaking powers.

Once again a court has found that the Board did not sufficiently address the proliferation admonition, and it enjoined enforcement of the rules. This recent decision ignored the Board's lengthy rulemaking deliberations and shed no more light on what constitutes undue proliferation than did preceding decisions. If the courts do not support the NLRB's rulemaking, litigation of this issue will continue. The end result will be the continuance of ineffective public policy which inhibits and trammels important employee rights.

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DISCUSSION

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It is difficult to say what the future holds for rulemaking at the National Labor Relations Board (NLRB). I am not as optimistic as Professor Morris about the likelihood of continued rulemaking by the Board. In NLRB Chairman Stephens' October 1988 speech, "The NLRB's Health Care Rulemaking: Myths Versus Reality," quoted by Professor Morris in his paper, the Chairman identified as a myth the contention that "This [health care] rulemaking will open the floodgates to other types of rulemaking" and as reality the fact that "There is simply no sentiment on the Board to engage in rulemaking in other areas." He went on to explain that the NLRB's hospital bargaining unit rulemaking was undertaken as a "last resort in the face of repeated failures of the traditional method of determining units."

The proponents of rulemaking rightly emphasize the fact that the rulemaking process can provide the Board with empirical evidence on which to base its policy determinations. Almost 20 years ago, I wrote an article in the *Cornell Law Review* ("Economics, Politics, and the Law: The NLRB's Division of Economic Research, 1935-1940." Vol. 55, No. 3, [February 1970], pp. 321-47) pointing to the absurdity of that provision of the Taft-Hartley Act that prohibits a supposedly expert administrative agency from engaging in its own independent research or "economic analysis." Professor Morris correctly, but sadly, reaffirms that criticism after all these years.

But one must caution about empirical evidence and ask, for example, whose empirical evidence and whose interpretation of that empirical evidence, remembering that all of the parties who appear before the Board, even in the rulemaking process, are interested parties not neutral fact-finders. Even academics have been known to have political, ideological, and personal values. One also needs to ask which NLRB he or she wants to propound these more-permanent rules

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because the history of NLRB policy shows often drastic shifts from one political administration to another.

It is also necessary to put rulemaking into context. The policy promoting the organization of employees for the purpose of collective bargaining has never been accepted by many powerful groups in this country, particularly most employers. This means that any proposed rulemaking that is unacceptable to these groups will be met by expert counsel, talented publicists, and powerful political allies—as is happening now.

As Chairman Stephens noted in his speech, for example: "For those who oppose the rulemaking and who are looking for ways to throw up obstacles to stop it in its tracks, this time period in the rulemaking process provides an opportunity for them to turn public opinion against it. That campaign is underway as evidenced by some of the written inquiries being sent to us from Capitol Hill." In politics, as Chairman Stephens said, perception is reality—and as Professors Koziara and Schwarz noted, 10 years after voting for union representation, the Saint Francis Hospital maintenance workers still have no collective bargaining; granted that only a relatively brief portion of that delay has been due to the rulemaking process.

The NLRB has been the center of controversy over the years because it must choose among competing policy alternatives in deciding controversies between powerful groups. That is probably why the Board has chosen a way less subject to attack—adjudication in individual cases. This is not an argument against rulemaking but a call to reconsider our whole national labor policy to determine if we are serious about encouraging organization for the purpose of collective bargaining. If we are not, the law is a sham and even a hindrance to organization and collective bargaining. If we are serious about a labor policy built on collective bargaining, then major overhauls—including *some* rulemaking—are definitely needed.

DISCUSSION

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Observers have often recommended rulemaking as a means of overcoming some of the deficiencies inherent in National Labor Relations Board (NLRB) decision making. Recently, the Board used rulemaking for only the second time in the past four decades to devise appropriate bargaining units in the health care industry. Although the three papers presented in this session are quite different, they each deal with the potential value of rulemaking in light of the health care industry experience. Professor Morris presents several compelling reasons for using rulemaking and urges the Board to extend its experimentation with formal rule setting. Professors Koziara and Schwarz provide a detailed chronology and careful analysis of the health care industry unit determination rulemaking proceedings. And Mr. Brown offers a negative appraisal of rulemaking as it was applied to the question of health care bargaining units, a view that is probably shared by many employers.

Professor Morris, one of the foremost experts on labor law in the U.S., has for many years urged the NLRB to use its rulemaking powers. His paper presents several generally clear and compelling reasons for using rulemaking. He sees the health care experience as a harbinger of an increasing emphasis on rulemaking by the Board. In particular, because the outcome of the health care rulemaking proceeding is being litigated, rather than the NLRB's power to make rules, Professor Morris argues that the health care experience will make it more difficult for the Board to avoid rulemaking in the future.

Although I do not disagree with Professor Morris over the potential benefits of rulemaking, I am less sanguine about what the health care experience portends for rulemaking generally. I see two issues that could undermine many of the benefits of rulemaking. First, the empirical data that rulemaking provides to the Board are not as unambiguous as Professor Morris suggests. The same data are subject

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to different interpretations. To borrow an example from public sector dispute resolution, is collective bargaining encouraged by a compulsory arbitration system that produces voluntary settlements in 80 percent (and the use of arbitration in 20 percent) of the bargaining units that are covered by the procedure? The values and preferences of individuals influence their answers to this question. Clearly, differences in interpretation of data generated by rulemaking are inevitable.

Second, as long as employers view unions antagonistically they are likely to use every avenue open to them to oppose unionization. This may mean that rulemaking will not end litigation and the delays attributable to it, as employers use the courts to contest the rules established by the Board or to contend that the Board's rules do not apply in their particular circumstances. I agree with a point made by Mr. Brown in his paper, namely that rulemaking will not necessarily reduce the volume of litigation arising under the Act; it will simply change the character of the litigation that occurs. The health care experience shows that rulemaking is no panacea.

As Professors Koziara and Schwarz indicate, the NLRB's choice to use rulemaking to establish appropriate bargaining units in health care in 1987 was a product of the frustration of 13 years of unit determination ping-pong with health care employers, unions, and the courts. It is an understatement to say that the parties could not agree on what constituted a bargaining unit that simultaneously guaranteed employees the "fullest freedom" in exercising their rights under the Act and fulfilled the congressional admonition to the Board to avoid a "proliferation of bargaining units" in the health care industry. The reason for the dispute is obvious: the structure of the appropriate unit influences whether or not a union will win a representation election.

Ironically, although the Board used rulemaking in health care in part to avoid the delays and inconsistent court decisions associated with litigation over individual unit determinations, it has been enjoined from instituting its final rule because of litigation over the rulemaking process and its outcome. Regardless of the outcome of that litigation, the description of the health care rulemaking experience by Professors Koziara and Schwarz illustrates the consequences of management efforts to avoid unionization and the deficiencies of rulemaking when a party contests the process.

Mr. Brown's analysis further illustrates the response of employers to rulemaking when they do not like the rules that are implemented. Although Mr. Brown argues that health care management's disapproval of rulemaking is due to concerns about the adequacy of the process and the responsiveness of rules to the needs of individual institutions, it is clear that health care employers would hold a different view if their proposed units had been selected by the NLRB. In such a case, however, unions would have exercised their right to appeal the rules. Moreover, even declaration of the validity of specific rules by the Supreme Court will not prevent employers or unions from litigating over the applicability of the rules to specific circumstances.

The polarization of labor and management and the lack of acceptance of unions as legitimate institutions are problems that may undermine rulemaking's intended benefits. Fundamental changes in the attitudes of the parties or fundamental changes in American labor laws may be needed before the benefits sought from rulemaking can be achieved.

X. DOCTORAL CONSORTIUM

Summary and Comments on the Panel Discussion: Industrial Relations and Human Resource Management: The Development of the Disciplines and the Scholars

RAPPORTEURS

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The IRRA Doctoral Consortium has two major objectives. The first is to encourage collegiality between doctoral students by providing an opportunity for them to meet and exchange ideas. The second is to support the development of future members of the academic and professional communities by providing a forum in which to discuss critical career and research issues with each other and the members of those communities. Doctoral Consortia topics have traditionally been issues of importance to doctoral students; however, the sessions are open to all and the active participation of senior members of the industrial relations (IR) profession has always been both welcomed and appreciated.

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The Fourth Annual Doctoral Consortium was held during the 42nd annual meeting of the IRRA. The session included four formal presentations, an informal group discussion between the panel and the participants, and time for each of the participants to introduce herself or himself and identify his or her special interests. Each participant receives a list of the doctoral students who attended.

The issues presented and discussed concerned (1) the development of the disciplines of IR and human resources management (HRM) and (2) the professional development of the researchers and educators in these disciplines. John Fossum, University of Minnesota, discussed "The Evolution of Industrial Relations and Human Resources and the Effects on the Academic Job Market." Marjorie Baldwin, East Carolina University, spoke about the process of "Transition from Doctoral Student to Faculty." Michael Gordon, Rutgers University, presented data describing "Publications and the Tenure Process: An Aggregate Perspective."

Fossum spoke from the perspective that the demand for professional academics in both IR and HRM is derived from the prevailing market view of the relationship between employers and employees. Using this perspective, he identified three views of the employment relationship and explained how each of these views has affected the development of the two disciplines. The following is a summary of his remarks.

The quantity and intensity of industrial conflict both before and during World War II motivated the establishment of what are now referred to as "traditional" IR programs and of the increasing level of research concerning labor/management relations. Conflict between employers and employees was assumed to be inevitable and the preservation of industrial peace was emphasized. Scholars in this discipline were primarily economists and political scientists who studied collective bargaining from an institutional approach.

As the United States economy was changed by increased foreign competition, industrial deregulation, an increase in the use of union avoidance policies, major shifts in industrial and occupational composition, and the passage of legislation governing HRM, the focus of the employment relationship shifted. Employers began to develop and emphasize normative policies designed to enhance organizational effectiveness through the implementation of human resource policies. The academic response was research in the areas of personnel and organizational behavior topics.

Fossum then described the most recent change in the employment relationship. He believes that the growing interest in the role of leadership, the role of worker organizations, and the existence of alternative forms of work organization will create a demand for academics trained in psychology, sociology, and economics, as well as in the traditional HRM programs.

Fossum suggested that future opportunities for doctoral candidates lie in the "new IR" rather than the "traditional HRM." The new IR will emphasize the development, role, and impact of worker organizations and the organization of work on the performance of the firm. In order to prepare for faculty positions in this field, students should structure their educational programs to include training in traditional IR, traditional HRM, economics, sociology, psychology, and organizational behavior.

In the second presentation, Marjorie Baldwin spoke about the transition from student to junior faculty. Using personal anecdotes, she identified some of the situations that face new Ph.D.'s when they accept their first faculty position. She also provided practical advice concerning the management of these situations. Her suggestions are summarized below.

- Do class preparations early. Request a list of your course assignments, syllabi for these courses, and copies of the textbooks that will be used.
- Don't take a break from your research. As a faculty member, you can't trade on your potential any longer, you must produce.
- New faculty may not have unlimited computer availability. Plan some research projects and have the empirical and statistical work completed prior to your appointment in order to maintain your research productivity.
- Don't be afraid to ask questions concerning the standards, policies, and procedures used by your department, your college, and the university in general.
- Get rid of the humility that was acquired as a student and acquire the confidence necessary to a faculty member.

Michael Gordon discussed the role of research and publication in the tenure process. He presented both a description of the structure of the tenure process and a prescription for junior faculty who are involved in the process. His remarks are summarized below.

The tenure process includes peer evaluation by faculty colleagues, an evaluation by the dean of the school or college, and an evaluation by some administrative body. Receiving tenure, therefore, depends upon submitting credentials that are acceptable to a larger group than immediate colleagues. It is imperative that new faculty members ask (1) What are the criteria or standardized norms used to award promotion and tenure within the department, the school or college, and the university? and (2) Do the department and the college have an ongoing dialogue with the university concerning those criteria and norms?

In recognition of the importance of scholarship in the tenure process, Gordon presented aggregate data that described the quantity of research published by scholars in the fields of IR and HRM. The data identified the percentage of scholars who had published varying numbers of articles during a six-year period in the 1980s. Gordon suggested that departments and colleges should be aware of these findings and use them to support applications for tenure.

He also stressed the importance of asking questions concerning the sincerity and commitment of senior faculty to the professional and academic development of junior faculty. Topics for discussion include the existence of a mentoring program, help in suggesting research areas, help in obtaining grants and funding, help by reading original drafts, help by sponsoring students in professional organizations, and the existence of a working papers seminar. A final suggestion was that new faculty, when they themselves are tenured, resolve to participate actively in the development of junior scholars.

As doctoral candidates, the topic of our development as scholars is critical to our success as academics and professionals. It has been the intent of the Doctoral Consortia to support this development by providing the opportunity for doctoral students to draw upon the knowledge of the academic and professional communities beyond our own institutions. The theme of the 1989 Consortium was to discuss the developmental process from student to senior faculty. The discussions of the educational background required of new faculty by John Fossum, the socialization process of new faculty by Marjorie Baldwin, and the role of research in the tenure process by Michael Gordon highlighted important facets of that process.

XI. LABOR RELATIONS IMPLICATIONS OF THE EASTERN AIR LINES STRIKE

The Eastern Air Lines Strike: Collective Bargaining Implications

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The Airline Deregulation Act of 1978 led to many unforeseen and dramatic changes in the industry and its labor relations (McKelvey, 1988). One of the most bitter episodes has been the 1989 Eastern Air Lines, Incorporated (Eastern) strike.

My purpose is to consider the federal government's role, as applied under the Railway Labor Act (RLA) and by the executive branch, in the conflict between Eastern and its unions. Given the respective aims and resources of the parties, Could the 1989 strike—a protracted, vitriolic, costly, and tragic affair—have been avoided? Are any lessons for public policy contained in this experience? I believe so.

When 8,500 mechanics and ramp service employees represented by the International Association of Machinists (IAM) struck Eastern on March 4, 1989, almost all of Eastern's 3,500 pilots, represented by the Air Line Pilots Association (ALPA), refused to cross IAM picket lines. Most of Eastern's 5,900 flight attendants, represented by the Transport Workers Union (TWU), also refused to work. The airline, admittedly surprised by its pilots' solidarity with the IAM strikers, was virtually shut down. Eastern declared bankruptcy five days later.

On November 22, 1989, almost nine months after the strike began, ALPA's unit at Eastern ended the pilots' sympathy strike. TWU surrendered the next day. Employment at Eastern had climbed slowly back to 1,863 pilots, including 867 of the 3,600 pilots who walked out,

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and to 3,000 flight attendants, including 1,075 of the 5,000 who struck. The IAM remained on strike, and only about 300 of its members had crossed picket lines to return to work; but Eastern was able to recruit 2,400 mechanics and 2,500 ramp workers. The latter, furnished by contractors, reportedly earn $5 or $6 an hour compared to a prestrike rate of about $15.

To survive the 1989 strike in spite of its $2.5 billion debt, Eastern used bankruptcy to fend off creditors, raised vital operating cash by selling assets (e.g., the East Coast shuttle, 67 aircraft, the Philadelphia gates) for $1.2 billion, and slashed labor costs by hiring strike replacements—at much lower rates of pay. Eastern estimates that lower pay for new hires represents an annual saving of $180 million.

But Eastern will lose $820 million in 1989, an all-time record for any airline ever, as against its 1988 loss of $387 million. Compared to before the strike, Eastern in November 1989 had 36 percent fewer employees (20,000 instead of 32,000), 26 percent fewer planes (188 instead of 255), dropped service to eight of 101 cities, and offered 800 instead of 1,100 daily flights. Most of the 18,000 strikers—the 15,000 who did not return to their Eastern jobs before November 22, 1989—are not likely to regain their jobs at Eastern.

Financial analysts are dubious about Eastern's survival: "Whether the airline can attract passengers at high enough rates to become viable before it runs out of cash is something few people outside the airline are willing to predict." (*New York Times*, December 11, 1989.)

Background

The year 1986 found Eastern in deep trouble. Eastern's long-term debt had reached $2.5 billion, most of it acquired since 1975 under CEO Frank Borman. Faced with a crisis, ALPA and TWU agreed to pay cuts of 20 percent and to B scales for new hires. Charles Bryan, president of IAM's Eastern unit (District 100), would grant concessions only if CEO Borman was replaced. Eastern's Board of Directors rejected this condition and instead approved Eastern's sale to Texas Air, no doubt to Bryan's chagrin. The sale became effective on November 25, 1986.

Frank Lorenzo, Texas Air chairman, arrived with his tough antiunion stance well established by events at Continental Airlines, Texas Air's other airline subsidiary. On September 24, 1983, six weeks into an IAM strike, Continental had filed for bankruptcy, canceled all domestic flights, repudiated its union contracts, and instituted pay cuts of about 50 percent before resuming operations three days later. When the Bankruptcy Court approved its reorganization plan on June 30, 1986, Continental had more employees, planes, and departures than in 1983. And no union contracts. One study noted (U.S. Dept. of Labor, 1988):

> . . . Lorenzo made it known that one way or another, he meant to force change [at Eastern]. Either the employees would have to accept significant wage reductions, or he would transfer assets to Continental and systematically dismantle Eastern Air Lines. Clearly the buyout was the end of Eastern Air Lines as employees had known it.

Additional options open to Mr. Lorenzo included asset transfers to Texas Air or Texas Air subsidiaries or raising cash by the sale of Eastern's assets to outsiders. Texas Air used all of these devices.

Although Eastern's prestrike pay rates were somewhat lower than those at other major carriers except Continental, Lorenzo's announced objective was to make Eastern profitable by cutting its pay rates and revising its work rules. As Robert McKersie (1989) has observed, however:

> From the Union's side, the Lorenzo strategy appeared to be a steady plundering of the assets in favor of the parent company, specifically, the sale (at a low price) of the Eastern reservation system [to Texas Air]; the sale of jets and landing slots at favorable prices; and a shift of assets to the parent company via loan agreements—all of these under the newly coined term of "upstreaming."

Although Eastern's operations remained separate from those of Continental, Eastern's strategic decisions (e.g., its shuttle sale, discussed below) have been essentially under Texas Air's control. Moreover, subsidiaries of Texas Air provide functional services to both airlines, e.g.: SystemOne (reservations), Fuel Management, Inc. (aircraft fuel), OnePass (a joint frequent flyer program), and CESI (Continental-Eastern Sales, Inc., for marketing). Each carrier pays Texas Air fees for these services, of course, and Texas Air maintains that they are all arm's-length transactions. According to the unions, Eastern is systematically overcharged under Texas Air's "upstream" program.

The unions' primary objective has been to locate a buyer who would extricate the airline from Texas Air. To promote such a development, the unions were ready to provide such a buyer with important concessions—concessions they would not offer to Lorenzo—in return for equity participation.

This nearly happened in April 1989, when an investment group headed by Peter Ueberroth offered to purchase Eastern for $464 million after obtaining union concessions valued at $210 million; but the transaction foundered when the Bankruptcy Court refused (because Lorenzo objected) to name a trustee who would manage Eastern during the transition, whereas the three unions would not participate if Lorenzo remained in charge (*Business Week*, April 24, 1989). Other potential buyers have hovered in the wings and conferred with the unions—Carl Icahn, Jay Pritzker, Joseph Ritchie, etc.—but Eastern still belongs to Texas Air and no sale is in prospect.

The Federal Courts

The conflict between Eastern and its unions has used the federal courts as a principal battleground, although many cases have been stayed by the bankruptcy. Some decisions have been of substantial assistance to the unions.

A 1987 Eastern plan to shift its IAM-represented Florida fleet service employees and their functions to a new Texas Air subsidiary and a 1988 Eastern decision to sell its East Coast shuttle to Texas Air for a bargain price[1] were abandoned after adverse rulings by Judge John Pratt (D.C. District).

A 1988, $5.5 million Eastern contract with Orion Air, for training pilots on leased Eastern aircraft as potential strike replacements, was canceled in May 1988 after Judge Barrington Parker (D.C. District) granted a preliminary injunction.

On August 30, 1988, the unions obtained a temporary injunction from Judge Parker against a "downsizing" and "restructuring" program involving 4,000 Eastern layoffs. The D.C. Appeals Court voided this injunction but required Eastern to post bond for $4.7 million in the event its actions were later found to violate the RLA. The 4,000 employees were laid off on September 10, 1988. (There has been no finding that these cutbacks violated the RLA.)

In December 1988, Judge Parker cleared the sale of Eastern's shuttle to Donald Trump for $365 million ($140 million more than Texas Air would have paid), holding that despite the struggles between Eastern and its unions, "equally plausible is the idea that management is seeking to rebuild the Company and place it on a sound financial footing" (*New York Times*, September 20, 1988).

On March 8, 1989, Judge Edward Davis (S.D., Florida) held that ALPA's sympathy strike was legal. A contrary decision would have meant the pilots prompt return to work and therefore a critical reinforcement of Eastern's ability to fight the strike.

The actual sale of Eastern's shuttle took place during the strike after approval by the Bankruptcy Court on May 24, 1989. Bankruptcy Judge Burton Lifland "has made it clear that, in the public interest, he wants the airline flying" (*New York Times*, December 11, 1989). Judge Lifland's many decisions have reflected this priority.

As the above cases illustrate, the courts have played a key role in shaping the tactics of conflict. Because many of their decisions have been difficult to predict, litigation has been a continuing source of uncertainty for Eastern and for the unions.

The National Mediation Board and President Bush

On January 29, 1988, IAM (soon joined by ALPA and TWU) asked the National Mediation Board (NMB) to define Eastern and Continental as a single airline for labor relations purposes. A prompt affirmative decision might have reestablished union representation among Continental's pilots, mechanics, and ramp-service personnel. After extensive hearings in June through December 1988, voluminous briefs and reply briefs were submitted in January and February 1989.

ALPA and IAM pressed the NMB for an early decision, whereas Eastern, Continental, and Texas Air asserted that any decision would violate the automatic stay provisions of the Bankruptcy Code, 11 U.S.C. §362(a). Despite the critical nature of the single-carrier issue, the NMB has not yet issued a decision or explained its failure to do so. Ironically, a decision by the NMB now that upholds the unions' position, which is unlikely, could accelerate their decertification.

Under the RLA, the NMB is empowered to keep the parties in mediation until it concludes that they have bargained to a genuine impasse. For Eastern and the IAM, to Eastern's great frustration while losing $1 million a day, this took 13 months. Not until January 31, 1989, did the NMB acknowledge an impasse by issuing a proffer of arbitration, quickly rejected by Eastern. In 30 days, if no Eastern-IAM settlement took place and if President Bush did not create an Emergency Board, Eastern could at last initiate its long-sought drastic pay cuts and other changes. And the IAM could call a legal strike.

On February 26, 1989, the NMB urged President Bush to appoint an Emergency Board for the Eastern-IAM dispute.[2] Such NMB recommendations have traditionally been respected. This action would have maintained the status quo for at least 60 more days and enabled the public to have the benefit of findings and recommendations by the impartial three-member board.

Eastern lobbied vigorously against the additional delay an Emergency Board would cause, whereas 33 U.S. Senators and the AFL-CIO supported the NMB's advice. IAM, to push the case for an Emergency Board, threatened to picket not only other airlines but railroads as well. (Secondary boycotts are not prohibited by the RLA.) President Bush took no action, however; some last-ditch mediated negotiations were unproductive, the 30-day status quo expired, Eastern implemented its bargaining demands, and the IAM strike began on March 4.

Perhaps to encourage President Bush to reconsider, ALPA announced a national "rule-book slowdown" by its 38,000 pilot members to commence on March 7. This pilot slowdown did not materialize, however: Secondary picketing of railroads and other airlines, restrained by injunctions, was not attempted and the IAM stoppage, effectively reinforced by the unprecedented support of Eastern's pilots and flight attendants, remained limited to Eastern.

Almost nine months later, on October 26, 1989, the U.S. Senate adopted, 65-35, a bill to establish a legislatively appointed blue ribbon, four-member, bipartisan commission that would formulate settlement recommendations for the Eastern strike within 45 days. The House, by unanimous consent, adopted the same bill on November 7. On November 21 at 11:35 P.M., however, 25 minutes before his deadline and just before Congress adjourned until January 23, 1990, the bill was vetoed by President Bush.

This veto was the last straw for the striking pilots, 750 of whom had already returned to their jobs at Eastern. The national ALPA organization had recently rejected two measures sought by the Eastern pilots: transferability of Eastern pilot seniority to other airlines and a national pilot sympathy strike. On October 24, 1989, only 54 percent of ALPA's board had voted to retain the monthly strike benefit of $2,400. On the day after President Bush's veto, ALPA notified Eastern that all of its members were now ready to return. TWU took the same action one day later.

Public Policy Implications

What we have witnessed at Eastern, especially since 1986, was a destructive and costly labor-management conflict, steeped in personalities and mutual distrust, in which each side's major objective had been to dominate or eliminate its opponent. Bob McKersie expressed it well in mid-1989: "The battle at Eastern is not about reaching agreement within some established framework; it is about changing the players and the basic relationship itself." (McKersie, 1989) This was not, obviously, a context in which constructive collective bargaining was likely to occur without powerful external pressures.

For some, including Frank Lorenzo, the NMB should have declared an impasse early in 1988 instead of in 1989 and let the parties have at it as soon as the 30-day RLA status quo expired. Others share the view well expressed by John T. Dunlop in March 1989, shortly after the strike began (Dunlop, 1989):

> The federal government's historical role in significant labor-management disputes has been to provide the public with a coherent, authoritative statement of the essential facts underlying the controversy and with neutral recommendations for resolving it. In the Eastern Airlines impasse, the government has not discharged this function very well.

Professor Dunlop then observed that "the risk of such a wide range of possible outcomes, unusual in most labor disputes, constituted a basis for serious government concern in this instance." I concur with Professor Dunlop.

To this date (December 1989), the parties and the public, which includes the government, have not had the benefit of a thorough and impartial investigation of the issues and allegations in the Eastern conflict along with findings and recommendations that would command attention and respect.

Presidential action to obtain such public involvement is consistent with a tradition, expressed in somewhat different ways under the RLA and the Taft-Hartley Labor Act, that the public interest is served by government intervention in important labor disputes to promote acceptable and equitable solutions.

The history of Eastern's conflict with its unions verifies that this kind of "investigation and recommendations" effort should have been initiated long before February 26, 1989, when the NMB urged President Bush to create an Emergency Board. Once it was evident, say by mid-1988, that mediation and procrastination were not likely to produce a settlement, it was time for the government to enlist the understanding and attention of the public.

The president, then Ronald Reagan, could have used the prestige of his office to establish a special commission of recognized and respected labor relations experts; or, he might have urged the NMB to declare an impasse in the spring of 1988 so that a timely RLA Emergency Board could do its job. Another possible option was to advise Congress that the president would not veto a bipartisan legislative commission.

Even as late as March 1989, just before or after the strike began on March 4, the creation of an RLA Emergency Board (as recommended by the NMB) or a similar ad hoc commission might still have facilitated a settlement. We'll never know.

Perhaps a long and debilitating strike was inevitable. Public policy does not require saving private enterprises or jobs that are no longer viable, especially where the parties insist on pursuing a mutually destructive course. I do not suggest otherwise.

The lesson of the Eastern experience indicates, however, that a tragic waste of human and material resources, along with nasty social tensions, might be reduced or avoided in such situations by appropriate and timely federal intervention. There would be little to lose; all of us (including the federal government, the courts, and the media) would benefit from an expert and impartial evaluation of the facts and the merits, and such intervention might even induce an agreement. It's worth a try when mediation has been unproductive and the alternative is predictably dismal.

Endnotes

[1] *New York Times*, March 20, 1989, p. 13; May 25, 1989, pp. 27-28. Under this plan, Texas Air would have acquired 95 percent ownership and Jet Capital—a holding company controlled by Frank Lorenzo that has 34.1 percent of the votes on Eastern's Board of Directors—would have obtained five percent. When the plan fell through, Eastern paid $3.55 million to Texas Air and $1.25 million to Jet Capital for related fees and costs.

[2] Except for one Emergency Board mandated by the Airline Deregulation Act of 1978—for a protracted dispute between Wien-Alaska Airlines and ALPA—no Emergency Board has been created for an airline dispute since 1966 (Kahn, 1976, pp. 121-122; Rehmus, forthcoming).

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The Eastern Air Lines Strike: Legal Implications

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The International Association of Machinists and Aerospace Workers (IAM) went on strike against Eastern Air Lines, Incorporated (Eastern) on March 4, 1989, after 17 months of labor negotiations. In response to the Machinists' strike, Eastern's pilots represented by the Air Line Pilots Association (ALPA) and flight attendants represented by the Transport Workers Union (TWU) refused to cross the picket lines, thereby virtually shutting down the airline. On March 9, 1989, Eastern filed for protection under Chapter 11 of the Bankruptcy Code in the U.S. Bankruptcy Court, Southern District of New York. These events precipitated the latest spectacular confrontation between management and labor under the auspices of both federal labor law and bankruptcy law.

The recent history of the use of bankruptcy law to affect labor relations has been much discussed and well-documented (West, 1986). In previous cases, particularly from 1975 until 1984 when the Bankruptcy Code was amended,[1] employers were accused of using bankruptcy law against unions to gain bargaining advantages not available to them under labor law. In the Eastern situation, however, both the company and the unions seemed to be using the bankruptcy filing to affect labor relations and achieve results not possible under labor law. The unions unsuccessfully attempted to use the bankruptcy proceedings to oust Frank Lorenzo from the management of Eastern through appointment of a bankruptcy trustee and/or a sale of the airline. The company, on the other hand, first made a feeble attempt to use bankruptcy law to alter the terms and conditions of the pilots' contract, and second, made a much more successful attempt to reduce quickly the size and operations of the company. The significant restructuring of the company may eventually allow Eastern to withdraw recognition of its unions through a combination of hiring

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permanent strike replacements and operating with a much smaller work force.

The Unions' Attempt to Change Eastern's Management

Within days of the Eastern bankruptcy filing, ALPA petitioned the bankruptcy court to appoint a trustee to take control of Eastern (*New York Times*, March 17 & 19, 1989). Under §1104 of the Bankruptcy Code, the bankruptcy court may appoint a trustee if the court finds "cause" such as fraud, dishonesty, incompetence, or gross mismanagement by the debtor's current management [11 U.S.C. §1104(a)(1)(1982)]. ALPA alleged that cause could be found in Frank Lorenzo's transfers of Eastern assets to Continental and Texas Air Corporation over the previous months and years. In addition, ALPA attached documents showing that Eastern had transferred landing slots at La Guardia Airport and National Airport to Continental on March 8, the day before Eastern filed bankruptcy (*New York Times*, March 17, 1989).

Section 1104 is a new provision of the 1978 Bankruptcy Code, building on more limited provisions from prior bankruptcy law. Its legislative history and interpretation indicate that its provisions should be construed in accord with the underlying presumption of the Code that the debtor in possession, the bankrupt company, normally remains in control of its own affairs. Furthermore, under bankruptcy practice, the appointment of a trustee in a Chapter 11 proceeding is regarded as an extraordinary remedy (Collier, 1989). Consequently, the prevailing inclination of a bankruptcy court receiving the union's petition would not be in the union's favor.

To counteract the union's request for the appointment of a trustee, Eastern petitioned the bankruptcy court a few days later to appoint an examiner, also provided for in §1104 of the Bankruptcy Code. The Code states that if the court does not appoint a trustee, the court may appoint an examiner to investigate any allegations of fraud or mismanagement [11 U.S.C. §1104(b)]. The power of an examiner is more limited than that of a trustee, but the court can expand an examiner's normal investigatory powers by transferring additional duties to the examiner from the debtor [11 U.S.C. §1106(b)].

When the bankruptcy judge ruled on these opposing petitions on March 23, it ruled in favor of Eastern, appointing an examiner, not a trustee, (*New York Times*, March 27, 1989; *Labor Relations Reporter*, April 3, 1989). Although the judge gave the examiner fairly broad powers to investigate past and pending sales of Eastern assets and to mediate the disputes between Eastern and its unions, the union failed in its initial attempt to take control of the airline from Lorenzo.

The next development indicating union efforts to unseat Eastern's management was its involvement in the proposed sale of Eastern to a group headed by Peter Ueberroth. The sale to Ueberroth was conditioned on the unions making concessions in wages and working conditions in exchange for a 30 percent ownership interest in the airline (*Newsweek* and *Time*, April 17, 1989). Before the deal was finalized, the unions renewed their demand that a trustee be appointed immediately, reflecting the unions' concern that if Lorenzo retained control during reorganization or until the sale was culminated, he would continue to sell off Eastern assets. Although it appeared to Ueberroth and the unions that the bankruptcy judge was going to appoint a trustee, at the last minute the judge refused to do so over the objections of Eastern and its bankruptcy lawyers (*Business Week*, April 24, 1989). Accordingly, the sale of Eastern to Ueberroth and friends fell through and Eastern management remained in control.

The union continued to press its request for a trustee. The court refused to rule, however, continuing its scheduled hearings in May, July, and August (*Aviation Week*, May 29 and July 10, 1989; *New York Times*, August 12, 1989). Thus, the unions were not successful in using the bankruptcy forum to accomplish what they could never accomplish under the Railway Labor Act (RLA), namely, a change in the management or ownership of the airline. Eastern, however, has been somewhat more successful in using bankruptcy to its advantage.

Eastern's Attempt to Change the Terms and Conditions of the Pilots' Contract

When Eastern filed for bankruptcy on March 9, it had no need to use the Bankruptcy Code to abrogate its contract with the IAM because it had already earned the right under the RLA to make unilateral changes in IAM terms and conditions of employment. The labor contract between Eastern and the IAM had previously expired on December 31, 1987 (Stockton, 1988). Under the RLA, however, the status quo created by the terms of the expired contract remained in effect, pending exhaustion of the RLA's negotiation and mediation procedures. When the National Mediation Board's (NMB) 30-day cooling-off period ended on March 4, 1989, the RLA gave Eastern the right to implement any of its proposed changes which had been the subject of prior negotiations with the union.[2] Consequently, Eastern did not need to use the Bankruptcy Code to reject the IAM contract and change terms and conditions of employment.

At the time of the bankruptcy filing, however, the status quo created by Eastern's contract with ALPA was still in effect. Although the actual contract with ALPA had expired on July 2, 1988 (*Wall Street Journal*, June 22, 1989), Eastern and ALPA had not yet exhausted the NMB's mediation procedures. At this point, §1113 of the Bankruptcy Code came into play.

Section 1113, allowing a bankrupt employer to petition the bankruptcy court to reject a labor contract, required Eastern to complete several steps before it could file its petition for rejection and/or make changes in the pilots' terms and conditions of employment. First, Eastern was required to make a proposal to ALPA which contained those modifications in employee "benefits and protections" which were "necessary to permit the reorganization of the debtor" [11 U.S.C.A. §1113(b)(1)(A)]. The proposal had to assure that all creditors, the debtor, and "all of the affected parties" would be treated fairly and equitably.

In accordance with these requirements, Eastern made a proposal to ALPA in early June calling for a 10 percent cut in pilots' pay for six months, followed by a 5 percent cut for a second six-month period (*Wall Street Journal*, June 9, 1989). All vacations were delayed until 1990. Furthermore, Eastern proposed that work rules be altered so that pilots could fly a maximum of 68 hours per month in 1990, and 60 hours thereafter. This maximum may be contrasted with the average 46 hours per month actually flown before the strike (*Aviation Week*, June 26, 1989). More significantly, the company's offer proposed that only 950 of the approximately 3,500 striking ALPA pilots be recalled if the strike were settled. Under its reduced operations, Eastern would need only 1,620 pilots (*Wall Street Journal*, June 9, 1989).[3]

In order to demonstrate that its proposal to ALPA treated all of the affected parties fairly and equitably, Eastern had reduced the pay of its top managers by 20 percent on Friday, June 2. This pay cut was to remain in effect for the remainder of 1989, followed by a 10 percent cut for the first six months of 1990. Nonmanagement employees still on the job were required to begin working 10-hour days. Their pay was not cut, but benefits were reduced and all vacations were cancelled for 1989. Furthermore, approximately 20 percent of the management employees working service and maintenance jobs since the IAM strike were notified that they would remain in those jobs, thereby reducing management staff by 20 percent (*Wall Street Journal*, June 5, 1989). In this way, Eastern was laying a factual basis for the bankruptcy court to find that its proposal to ALPA reflected fair and equitable treatment of both union and nonunion employees.

The second step required by §1113 is that the bankrupt employer provide the union with relevant information necessary to evaluate its proposal [11 U.S.C.A. §1113(b)(1)(B)]. Presumably, Eastern made this information available to ALPA when it presented its proposal.

Third, under §1113 the employer must meet "at reasonable times" with the union to confer "in good faith" in an attempt to agree on mutually satisfactory modifications of the labor contract [11 U.S.C.A. §1113(b)(2)]. As soon as Eastern made its proposal to ALPA, it asked for round-the-clock negotiations (*Wall Street Journal*, June 9, 1989). ALPA refused, claiming Eastern's proposal was merely a ploy to use the bankruptcy proceedings to abrogate its contract with the pilots.

On June 22, Eastern petitioned the bankruptcy court for permission to reject its contract with ALPA (*Wall Street Journal*, June 22, 1989). Section 1113 provides that once a petition to reject is filed, a hearing on rejection must be held within 14 to 21 days, unless the parties agree to extend the time. In addition, the parties must continue to negotiate in good faith over the company's proposal until the beginning of the hearing. Finally, the court must rule on the rejection petition within 30 days after the beginning of the hearing, again unless the parties agree to extend the time [11 U.S.C.A. §1113(d)]. If the court fails to rule within these 30 days, §1113 allows the debtor employer to terminate the contract pending a ruling. Therefore, unless it agreed to extensions of time, Eastern could count on the fact that by August 14, either the bankruptcy court would have ruled on its rejection petition, or, in the alternative, it would be able to implement unilaterally its proposed changes in the ALPA contract.

Section 1113 allows a bankruptcy court to approve rejection of a labor contract agreement only if: (1) the company's proposal meets the previously discussed requirements of §1113; (2) the union has refused to accept the proposal "without good cause"; and (3) the "balance of the equities clearly favors rejection" of the contract [11 U.S.C.A. §1113(c)]. Fortunately or unfortunately, we will never know if Eastern had exhausted its obligations under this bankruptcy procedure, or if the "balance of the equities" favored rejection. On July 26, Eastern withdrew its rejection petition before the bankruptcy court held any hearing or issued any ruling on it. Apparently, in its attempt to encourage striking pilots to return to work, it decided to abandon its attempt to reject the pilots' contract under bankruptcy law.

Nevertheless, the significance of §1113's addition to the Bankruptcy Code in 1984 is illustrated by the difference between this story of Eastern's aborted attempt to reject its contract with ALPA and the scenario followed by Continental in 1983. The major difference is time. Continental unilaterally terminated its contract with ALPA and changed the pilots' terms and conditions of employment immediately upon filing bankruptcy. Section 1113 prohibited Eastern from doing the same. Instead, before it could implement new employment terms, Eastern had to make a proposal to the union, meet and negotiate with its representatives, file papers in court, have a hearing, and wait 51 days between filing its petition and obtaining a court ruling. Under this bankruptcy procedure, both parties have one more opportunity to reach agreement before unilateral action by the company may occur. On the other hand, if the NMB had previously declared an impasse in negotiations between Eastern and ALPA, triggering the 30-day cooling-off period, Eastern could have earlier changed the pilots' terms of employment under the authority of the RLA, making any bankruptcy petition unnecessary. The reality is that at some point in time, under either the RLA or bankruptcy law, Eastern could have implemented new terms and conditions of employment absent agreement with the union. The only difference is at what point in time this would have occurred.

Will the Bankruptcy Reorganization of Eastern Result in "Decertification" of its Unions?

Although the restructuring of Eastern has been underway since its purchase by Texas Air in 1986, with sales of significant Eastern assets in 1987 and 1988, the bankruptcy filing in March 1989 accelerated this process. Almost all of Eastern's flights were temporarily suspended; operations resumed slowly over the next weeks and months. When Eastern first announced its bankruptcy reorganization plan, it projected a 33 to 40 percent decrease in the size of the airline. Its projections called for 800 flights per day, down from a prestrike schedule of 1,100 per day. More importantly, it projected a pilot work force of approximately 1,700, down from 3,500 prestrike pilots. Eastern's total work force was projected to shrink from 31,000 to 17,000 (*Wall Street Journal*, July 3, 1989; *Aviation Week*, July 10, 1989). By permanently reducing the size of the airline's work force, while at the same time training and hiring replacement pilots to operate the airline during the strike, Eastern may be setting the stage to withdraw recognition from the pilots' union.

The federal courts have never questioned the right of an employer to operate its business during a strike (*NLRB v. Mackay Radio*, 304 U.S. 333 (1938). Prior to deregulation in 1978, few airlines attempted to operate during strikes. Since 1979, however, airlines have continued operations during almost all strikes (Cappelli, 1988). The right to operate during a strike carries with it the right to hire strike replacements, which significantly affects the rights of strikers to return to their jobs in the event the union ends the strike. The legal rules developed under the NLRA provided that if a striker's position was filled by a permanent replacement employee before that striker offered to return to work, the employer was not required to lay off the replacement employee and reinstate the striker. Instead, the NLRA required the employer to place the returning striker on a preferential hiring list and reinstate the striker when a position became available.

In *Trans World Airlines, Inc. v. Independent Federation of Flight Attendants* (1989), the Supreme Court recently extended this NLRA doctrine to a strike occurring under the RLA. When the TWA flight attendants went out on strike in March 1986, at the end of the NMB's 30-day cooling-off period, TWA informed the flight attendants that it would continue to operate during the strike by using supervisors and permanent replacements. The replacement employees included new hires, bargaining unit employees who chose not to strike, and flight attendants who initially went on strike but returned to work before the strike ended. When the union made an unconditional offer to return to work on behalf of approximately 5,000 striking flight attendants in May 1986, TWA agreed to reinstate immediately only 197 strikers, the number needed to fill vacancies then existing. In upholding the actions of TWA, the Court essentially applied the NLRA *Mackay* doctrine to the RLA without change.

The Court's holding in *TWA* only protected permanent replacements who were actually doing bargaining unit work at the time the strikers offered to return to work. It did not apply to any new hires still in training. Thus, TWA was not allowed to save positions for 463 new hires not yet fully trained by the end of the strike.

The strike replacement situation at Eastern became a serious problem for ALPA in August 1989. In early August, Eastern indicated that as soon as its latest group of newly hired pilots finished training, it would have no vacancies left in its reduced pilot work force (*New York Times*, August 12, 1989). Eastern reported that it had already trained 350 new pilots; 220 pilots had not struck; 410 strikers had returned to work; and it had 700 more pilots in training. Although

ALPA's leadership considered calling off the sympathy strike, fearing that the 3,000 pilots still on strike would be permanently replaced, the rank and file indicated they did not want to offer to return to work (*Aviation Week*, August 14, 1989). The motive behind ALPA's suggestion that the pilots call off the strike appeared to be a fear that permanent replacement of the striking pilots could lead to loss of recognition by ALPA as bargaining representative at Eastern.

This had been the end result of the 1983 bankruptcy and strike at Continental. In 1985, Continental withdrew recognition from ALPA after the striking pilots had been replaced and more than 1,400 of the replacement pilots signed a petition requesting that ALPA no longer represent them in bargaining (*Aviation Week*, Sept. 2, 1985; *Labor Relations Reporter*, 1985).

It remains to be seen whether or not ALPA will lose bargaining rights at Eastern under the same circumstances as it did at Continental. If Eastern is successful in replacing the striking ALPA pilots with new hires, conceivably, the new hires could take steps to reject ALPA. Likewise, the new hires who have replaced the striking IAM and TWU workers could do the same. These replacement employees could, like the replacement Continental pilots, sign petitions to their employer, declaring that they no longer want their respective unions, in which case Eastern would probably unilaterally withdraw recognition. It would then be up to the unions to contest this withdrawal of recognition before the NMB and the courts.

By restructuring the airline and reducing its size, Eastern has made it easier to replace the striking employees. With a smaller bargaining unit, Eastern has had to train fewer new pilots. In addition, by filing bankruptcy, Eastern has been able to divert resources to pilot training from paying past-due bills to creditors. The automatic stay effect of the bankruptcy filing prohibits any attempt of creditors to collect prepetition debts. Thus, Eastern has been able to free up temporary cash to pay for the training of strike replacements. With every strike replacement, Eastern may be hoping for one more vote against ALPA, the IAM, or the TWU if the new employees seek to reject their unions at some future time.

Endnotes

[1] Section 1113 was added to the Bankruptcy Code in 1984 to prevent employers from unilaterally terminating collective bargaining agreements upon filing bankruptcy. *See* 11 U.S.C.A. §1113 (West Supp. 1985).

[2] 45 U.S.C. §§152 Seventh, 155 First, 156, 160 (1982). In addition, under the holding of *Railway Clerks v. Fla. E. Coast Ry.*, 384 U.S. 238(1966), in the event of a strike, the carrier may make temporary changes in terms and conditions of employment, not previously bargained over with the union, if these temporary changes are "reasonably necessary" to operate with replacement employees during a strike (*Railway Clerks v. Fla. E. Coast Ry.* at 246-48). At the end of the strike, the terms of the previous collective bargaining agreement, except as modified by any new agreement, are restored to their full force. *Id.* at 247, n. 7. See also Rehmus, 1984.

[3] Evidently, by June 9, Eastern had approximately 670 pilots flying or in training. By the middle of June, Eastern indicated that 259 pilots had never gone on strike or had crossed the picket lines, another 108 had graduated from its training programs, and 527 pilot candidates were presently in training (*Aviation Week*, June 26, 1989). The *Wall Street Journal* reported on July 3 that Eastern had 433 pilots, 287 prestrike Eastern pilots, and 146 replacement or new pilot hires (*Wall Street Journal*, July 3, 1989.)

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DISCUSSION

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The federal courts have repeatedly visited complex labor law issues at Eastern Air Lines, Incorporated (Eastern) since the company was acquired by the Texas Air Corporation in 1986, often applying novel and creative answers to difficult questions. *See e.g., Eastern Air Lines, Inc. v. Air Line Pilots Association, Int'l.*, 861 F.2d 1546 (11th Cir. 1988) [affirming validity of terse, 4-page, handwritten labor agreement and enforcing mandatory arbitration of disputes under Railway Labor Act (RLA), even if this forced "interest arbitration" which the airline had previously rejected]; *Air Line Pilots Association, Int'l., et al. v. Eastern Air Lines Inc., et al.*, No. 87-2143, (D.D.C. Aug. 13, 1987) [order granting labor injunction against Texas Air Corporation tender offer for special class of Eastern preferred stock which by its terms can be owned only by Eastern employees (and trusts for their benefit) and which carries unique rights to vote as a class to approve or stop any (1) merger where Eastern is not the surviving airline; and (2) sale of all or substantially all of Eastern's assets]. The most comprehensive federal court decisions dealt with injunctive relief against Eastern's downsizing in September 1988, but this litigation resulted in more unsettled labor law as indicated by the splintered opinions and vitriolic dissension on the court of appeals. *Air Line Pilots Association, Int'l., v. Eastern Air Lines, Inc.*, 703 F. Supp. 962 (D.D.C.) [injunction against downsizing granted to enforce RLA bargaining and noninterference provisions], *rev'd.* 863 F.2d 891 (D.C. Cir. 1988) [reversal by 3-judge appeals court panel], *pet. for rehearing en banc denied, id.* at 913-32 [19-page set of 6 separate opinions of 8 of 11 appeals court judges narrowly (and ironically) *denying* review by the full appeals court], *pet. for cert. filed,* 57 U.S.L.W. 3603 (U.S. Feb. 24, 1989) (No. 88-1403). Overall, while sometimes deciding matters of enormous leverage to the parties, *e.g., Eastern Air Lines, Inc. v. Air Line Pilots Association, Int'l., et al.*, 710 F. Supp. 1342 (S.D. Fla. 1989), [denial of injunction against Eastern pilots' sympathy strike], *aff'd.* No. 89-5229 (11th Cir. June 7, 1989), the

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litigation in the federal courts has not produced the parties' logical ultimate objective of a timely and comprehensive settlement of their labor disputes on mutually acceptable terms.

Litigation at the National Mediation Board (NMB), while treating an important and systemic element of the Eastern labor disputes in the proceedings to declare Eastern and Continental Airlines a single carrier for RLA purposes, has likewise failed to produce timely labor peace or even a timely answer to the question put in petitions filed there almost 2 years ago. *NMB Cases C.R. 6053-59, 6061, 6066-67* (filed Mar. 10, 14, and 18, 1988). The Bankruptcy Court, riddled with questionable conduct and distrusted by all, *see Legal Times*, Wash. D.C. (Jan. 8, 1990), is perhaps most unlikely to produce any comprehensive concord.

The Eastern-Texas Air labor disputes have continued for nearly 4 years and have already resulted in staggering financial costs, the displacement of thousands of union and nonunion employees, and the possible extinction of one of our few remaining major air carriers. A comprehensive study of this labor dispute—including focus on such systemic questions as unsuccessful bargaining mechanisms and strategies and the propriety of government certificates to maintain double-breasted corporations in our national transportation industry—is long overdue.

The federal government is responsible for this examination. Indeed, the operation of all airlines and railroads are conducted pursuant to certificates issued by the federal government "in the public interest." *See* 49 U.S.C. App. §1371 (1989). There is no doubt that the public interest has been damaged by the protracted labor war at Eastern, and, in any case, this itself is a matter for federal inquiry.

Presidential leadership would put such a comprehensive study in the Executive Branch. "[T]he President may call into effect both the great power of his office and that of informed public opinion through the creation of an emergency board." *Chicago & N.W. Ry. v. United Transp. Union*, 402 U.S. 570, 597 (1971) (Brennen dissenting). *See also Maine Central R.R. v. B'hd. of Maintenance of Way Employees*, 813 F.2d 484 (1st Cir. 1987) [Presidential Emergency Board and Congressional action at small railway in labor dispute arguably having nowhere near the public interest implications of the Eastern disputes]. Should the President continue to abdicate this responsibility, however, the Congress should act in the public interest and conduct its own comprehensive inquiry. Whether the federal government acts or abdicates, a responsible academia has an independent duty to produce critical studies on one of the most protracted and difficult labor disputes in the 20th century.

DISCUSSION

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Mr. Moderator and fellow panelist, I respectfully dissent. Bad facts should not make bad federal labor policy. We have to put the events at Eastern Air Lines, Incorporated (Eastern) in perspective under the Railway Labor Act (RLA). I am not going to take sides this morning. For purposes of this discussion, I will assume, as the bankruptcy examiner, David I. Shapiro, observed yesterday in court, that Eastern and its unions are two "scorpions in a battle."

We all know that the RLA has elaborate processes for attempting to settle labor disputes—direct negotiations, mediation, proffers of arbitration, cooling-off periods, emergency boards, etc. Sometimes those peaceful processes don't work—they don't bring voluntary settlements between the parties. But that is not necessarily a failure of the RLA, a failure of the National Mediation Board (NMB), or a failure of public policy.

What happens then? We all should know that the RLA contemplates economic self-help—exactly what we have seen happening from the carrier, the International Association of Machinists and Aerospace Workers (IAM), Air Line Pilots Association (ALPA), and Transport Workers Union (TWU) at Eastern this year.[1]

Economic self-help may be destructive; it may result in employees losing their jobs; it may result in a carrier losing its business; it may be suicidal; it may be all of the bad things that we have heard this morning. Of course, it is precisely because of the fear of those bad consequences that we have settlements without strikes in over 98 percent of the cases.

It's against this backdrop of the RLA that we should view the repeated calls, including the call of Professor Kahn, for the federal government to intervene in the Eastern labor dispute. On what basis?

The standards for a Presidential Emergency Board under the RLA were not met in this case. Emergency Boards are limited to disputes

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where there is a substantial threat to "interrupt interstate commerce to a degree such as to deprive any section of the country of essential transportation service . . ."[2]

At this juncture, On what basis should there be federal governmental intervention?

I search for the reason—and it is difficult to come up with any basis for intervention other than raw politics. And if that is to be the case, then let's admit it and openly make that part of the national labor policy that Congress members can intervene in management-union labor disputes whenever lobbyists and constituents can assert enough pressure to force intervention.

But ask yourself where the line is to be drawn on intervening in management-union labor disputes in future cases. Or is it like the Supreme Court's definition of pornography—Congress will know it when it sees it and then intervene.

I draw a different lesson from the Eastern strike than Professor Kahn does.

First, I don't see a failure of public policy, nor the need for federal government intervention in the form of blue ribbon or bipartisan commissions. Beyond the NMB and Section 10 of the RLA, it is not the role of the federal government to intervene in labor disputes. Subject to compliance with the various laws, labor and others, settlement at Eastern should be "left entirely to the interplay of economic forces without further governmental intervention."[3] That is the national labor policy as defined in the RLA since 1926; that is free collective bargaining.

Secondly, I would ask might not the real lesson of the Eastern strike be that the government should make clear from the outset that it will not intervene in such cases, so that the parties themselves will more realistically assess their positions, and recognize that no white knight (i.e., a "benevolent government") will ride to their rescue. If the IAM, ALPA, and TWU had known from the beginning that the only resources they could count on were their own, and knowing their adversary as they surely did, would they have embarked on their same suicidal course?

Endnotes

[1] *Florida E. Coast Ry. Co. v. Brotherhood of R.R. Trainmen*, 336 F.2d 172, 181 (5th Cir. 1964). "[W]hen the machinery of industrial peace fails, the policy in all national labor legislation is to let loose the full economic power of each party."

[2] The NMB initially recommended a Presidential Emergency Board, which President Bush declined. The Eastern strike itself did not justify such a board. Arguably, if the strike had spread to other carriers, including rail carriers, through secondary boycotts, such a board would have been justified.

[3] *Pan American World Airways v. Flight Eng'rs Int'l Ass'n*, 306 F.2d 840, 846 (2nd Cir. 1962).

XII. UNDERSTANDING ORGANIZATIONAL BEHAVIOR: THE STATE OF SOCIAL SCIENCE RESEARCH

Economics and Organizational Behavior: Finding a Middle Path for Industrial Relations

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As economists continue to expand their research into issues associated with unions and as scholars in organizational studies explore new issues concerning employment relations, industrial relations is losing a unique set of topics and will increasingly be challenged to define its uniqueness in other ways. Scholars in the industrial relations tradition will need to establish how their *approach* to employment issues differs from both economics and organizational behavior.

The Arguments Behind OB and Economics Research

The term organizational behavior (OB) is typically used to identify the psychology-based examination of the behavior of individuals in organizations, in contrast to organizational theory, the sociology-based study of organizations. With its roots in industrial and organizational psychology, OB research continues the psychologist's tradition of using the individual as the unit of analysis, and it has a long history of research on topics that address the attitudes and behavior of workers. Indeed, Staw (1984) suggests that topics such as absenteeism, turnover, and job attitudes constitute the core of OB interests. Most OB research relies on explanations that reside within the individual—

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characteristics of personalities or other dispositions to act in given ways that are intrinsic to a given worker or aspects of a worker's situation such as demographic characteristics, etc. Objective information about the context in which employees work such as characteristics of their jobs, of their organizations, or their labor markets, are typically considered, if at all, only through the perceptions of individual workers.

This cognitive approach and its focus on perceptions represent the most important reason why OB has found it increasingly difficult to address the external environment. In such models, as Ilgen and Klein (1989 p. 329) conclude, "the nature of the environment to which the individual responds is at least partially constructed by that individual." And it is not a great leap to suggest that objective accounts of the environment are therefore irrelevant. As Steiner (1986) notes, it is now rarely the case that research includes data from anything but participating observers—that is, data in the form of perceptions. It is easy to see how the rise in OB of even implicit aspects of this cognitive paradigm could lead to a sharp reduction in concern with the external environment in OB research. If individuals construct their own images of the environment, then why bother with the objective environment? The gradual rise of this paradigm in OB, documented by Ilgen and Klein (1989), coincides closely with the gradual erosion in the role for context in OB research.

Economics also focuses on the behavior of individuals as its unit of analysis, and a sizable portion of the history of economic thought has been devoted to issues associated with employment. The important difference with OB research, however, is that the explanations for individual behavior focus explicitly on factors external to the individual. While economists acknowledge that preferences and tastes may differ, those differences are assumed away rather than examined. Instead, explanations center on the relationship that individuals have to markets, and the behavior of employees is explained by characteristics of, and conditions in, their respective labor markets. Because workers maintain a relationship with labor markets external to their employers, changes in that external labor market affect their behavior even within their current employment. We can illustrate the differences in economic and OB approaches to employment issues by examining how they treat topics common to both fields; absenteeism and turnover.

Absenteeism

Traditional studies of work attendance in OB examine it as a form of withdrawal behavior. Perhaps the most comprehensive model is by Steers and Rhodes (1978) who consider attendance as a function of ability and motivation to attend where the latter is driven by attitudes such as job satisfaction and to a lesser extent organizational commitment (Mowday, Porter, and Steers 1982). Personal characteristics (Ilgen and Hollenback 1977) and characteristics of the job (Garrison and Muchinsky 1977) are sometimes considered, although as Clegg's (1983) survey makes clear, these considerations appear rarely, and when they do are not examined per se but are typically used as control variables.

Studies such as Morgan and Herman (1976), which examine how potential costs of absenteeism might affect attendance, and Staw and Oldham (1978), which consider the potential benefits for the worker of absenteeism, see the process as a rational decision where individuals weigh the costs and benefits of being absent. This development is important because the factors that affect the costs and benefits of individuals' decision on any issue, including whether to attend work or not, may include factors from the totality of their experiences and are certainly not limited to considerations within the confines of the work place. The Staw and Oldham (1978) argument relies on the match between worker and job characteristics, implying the need to examine the selection process through which workers enter from the outside, an issue we examine below. But so far, efforts to examine these costs and benefits have been limited to such things as demands from nonwork activity (Chadwick-Jones et al., 1973). The failure to pursue these external environment factors is consistent with the critique made by Clegg (1983) of this literature and stands in the way of efforts to explore the rational decision approach to absenteeism.

Economists also pursue a rational decision approach to absenteeism but focus more narrowly on the potential costs associated with being caught and dismissed; costs reflected in the opportunities for alternative work. Taylor (1979) attributes the decline in absenteeism in the late 1970s to rising unemployment and reduced opportunities for alternative jobs. Leigh (1985) finds that for a national sample, absenteeism is lower when unemployment rates are higher. He finds this due not only to the fact that those laid off when unemployment rises tend to be those with higher absenteeism, an artifact, but also that those who remain employed reduce their absenteeism. Allen (1981) finds that absenteeism is lower where wages are higher and for older workers. Cappelli (1989) also finds that absenteeism is lower at plants within the same firm where wage premiums over the outside market are higher and where a greater proportion of workers are on layoff. Winkler (1980) and Jacobson (1989) find that absenteeism is higher where pay is not lost and lower where bonuses are paid for better attendance.

Turnover

Because much of the OB research on turnover has its roots in the rational individual decision-making approach associated with March and Simon (1958), it is closer in argument and spirit to the economics approach than is perhaps any other issue in organizational behavior. Mobley's (1982) account of the development of OB theories of turnover shows that over time these theories have not only grown more complex but systematically reduced the role for the external environment. Steers and Mowday (1981) survey 1,000 or more turnover studies and find them focused primarily on job attitudes, presenting some evidence for the role of personal characteristics, but generally ignoring information about external issues. Similarly, Clegg's (1983) survey found no behavioral studies that examined labor markets or the context in which employment takes place. Most of these studies are similar to absenteeism in looking for associations between attitudes toward one's current job and turnover.

In contrast, economic studies of turnover focus explicitly on the situation in the outside labor market and the opportunities for movement. For example, even more so than with absenteeism, the quit rate varies directly with the business cycle; it was high in the 1960s when labor markets were tight and then dropped off substantially with the recessions in the 1970s. This is true in other countries as well (Jones and Martin, 1986). As Akerlof, Rose, and Yellen (1988) argue, one reason for this is that as some workers leave for better jobs as the economy is expanding, they create vacancies—a "vacancy chain"—which then creates opportunities for other workers to switch jobs.[2] Price (1977) finds that the strongest and most consistent predictor of firm-level turnover appears to be the wage level; higher wages and increases in wages (other things equal) reduce turnover; more recent studies continue to support this conclusion (Antel 1988). Perhaps the second strongest and most consistent predictor of individual turnover in Price's survey is with opportunities elsewhere. Recent studies also continue to support this relationship: Lakhani (1988), for example, finds that combat soldiers have a lower quit rate from the army than do other soldiers in part because their skills (thankfully) do not translate to alternative employment. Weiss (1984) finds that alternative opportunities increase quits when controlling for satisfaction with one's current job.

The general themes of these two approaches should be clear. Both have important problems, however. First, empirical results in both fields demonstrate that the other is omitting important aspects of the explanation for worker attitudes and behavior. There is no doubt that workers do have relationships with external labor markets, something that OB must address; similarly, the OB research showing that there is considerable variance in the behaviors and attitudes of workers even for workers facing similar labor market conditions suggests that dispositions and other characteristics of individuals should be considered as well.

But there is a second, practical drawback common to both approaches. With increased competition and a growing need by organizations to reduce costs and improve quality, the behavior of individual employees in areas such as absenteeism, turnover, etc. becomes even more important. Organizations will demand information that helps them understand individual behavior, and in particular, information about explanations that are within their control. While it is in some ways useful for organizations to know that absenteeism will decline in a recession and that some workers have dispositions to be absent more, it is much more useful to understand how their organizational characteristics, policies, and practices affect individual attitudes and behavior.

There have been studies using organizational-level explanations in both fields, but they tend to be rare.[3] And they tend to be raw empiricism with little theoretical guidance, as Rousseau (1985) argues. Hulin and Roznowski (1985, p. 53) note, for example, that most of the results found so far between organizational structure and individual responses have been trivial because we do not understand the intervening factors. Berger and Cummings (1979) echo Porter and Lawler's (1965) concern about methodological problems with this line of research, especially the fact that many studies lack conceptual analysis for linking macro and micro variables.

There are also a few examples of efforts in economics to examine the effects of organizations on individual employer attitudes and behaviors. These efforts are sometimes described as "the new institutional economics" because like the John R. Commons' generation of institutional economists, their concern is with the institutions of market economies, but they bring to that analysis well-established, a priori explanations from neoclassical economics.[1]

The Middle Road of Industrial Relations

Industrial relations has long shared with economics a concern with the environment external to individuals and organizations but cast its net more broadly to examine not only the effects of markets (product as well as labor) but other aspects of the environment such as social attitudes, the legal and regulatory structure, the state of technology, etc. (see Dunlop 1957 for the seminal taxonomy). From its roots in institutional economics, industrial relations has focused on employment institutions, many of which operate at the organizational level between individuals and markets. Institutions such as unions, internal labor markets, and employment policies moderate and change the influence of markets. And in contrast with the new institutional economics, industrial relations has been an empirically dominated field. The traditional focus of industrial relations, however, was with explaining the actions of institutions—especially unions—and not with their effects on employees' behaviors and attitudes.

But there is a growing body of research suggesting relationships between these institutions and individual behavior. Perhaps the best examples are Freeman and Medoff's (1984) research showing how union membership provides "voice" as an alternative to quitting; Dalton and Perry (1981) find that relationships between labor and management, expressed in collective bargaining agreements, can have a strong effect on absenteeism by creating norms (e.g., acceptable levels of absence). Quit rates vary widely by industry and by job, reflecting characteristics of the work and labor markets and employment relationships (see Stoikov and Raimon 1968; Price 1977 for a survey). Construction jobs have among the highest quit rates because the craft labor market creates workers with interchangeable skills, and hiring halls make it possible to swap jobs and workers; government employment has the lowest quit rate not only because of large pensions which encourage attachment (see Ippolito 1987 below) but because of the nature of the relationship which makes the demands and rewards from work very stable. Quit rates are also very low in Japan compared to the U.S. not only because of cultural differences but also because of labor market institutions which help tie workers to their firms (Taira 1970).

As noted above, the demand for research will be to link these organizational issues to a wider range of individual responses currently examined within OB research, including worker attitudes. Certainly one of the more important roles for institutions such as unions, internal labor markets, and employment policies more broadly defined is to buffer and moderate not only the economic environment but also the social environment in order to change the values and attitudes that workers hold toward their jobs and their organizations. (The best examples of these buffering effects are in facilities that are trying to adopt nontraditional work attitudes, such as the Japanese firms operating in the U.S. or "greenfield" plants trying to remain non-union.) There are clear reasons for believing that employment institutions should affect worker attitudes and values, and this is an area that industrial relations should pursue.

We know that unions can play a direct role in shaping employee responses. Cappelli and Sherer (1988) find that the extent to which workers received their information about employment issues from the union was inversely related to satisfaction. As Mills (1948) argues, unions exist to channel discontent and use it (along with the threat of strikes driven by it) to secure changes from management. They can manage dissatisfaction not only by pointing out existing problems but, more importantly, by shaping comparisons and expectations. To illustrate, consider the conflicting tasks facing the union in shaping the attitudes of its members during collective bargaining. First, it must generate dissatisfaction with current conditions to persuade members to strike (but not to the point where member expectations will be difficult to meet) and then convince its members that conditions are good enough to end the strike, ratify the new contract, and go back to work. The new contracts are rarely different enough to explain the rather dramatic reversals in worker attitudes and behaviors—from striking to ratification—without the role played by unions. Cappelli and Sterling (1988) find, for example, that union members vote down collective bargaining contracts, other things equal, when unions have poor institutional relations with management.

We also know that commitment to organizations can be affected by employment policies. Salancik (1977) explains how commitment is increased by reducing opportunities to leave. Policies that increase organization-specific skills tie the worker more closely to the organization, making it difficult to leave by reducing the fit between the worker's skills and the demands of jobs in the external labor market. These skills are an example of the "side bets" literature

(Becker, 1960; Rusbult and Farrell, 1983) which argues that investments in the job that are lost in moving provide important costs that restrict turnover. (Such arguments concerning specific human capital have long been used in economics to explain lower quit rates). Seniority-based employment decisions not only reduce turnover but increase behavioral commitment by increasing the rewards associated with long service.

There are other possible relationships between employment institutions and practices and the interests of behavioral research. For example, the use of objective decision rules like seniority may reduce the perceived inequity that many workers report by reducing subjective assessments; all decision rules governing employment such as contracts have the ability to shape referents as Goodman (1974) found and, in turn, shape expectations and attitudes. Explicit socialization programs shape the referents of employees—toward those that will make them feel equitably treated; Cappelli and Sherer (1990) report how management sought to shape the referents of lower-paid, 'B'-tier workers toward similar workers in other firms and away from more senior, higher paid workers in the same firm in order to reduce their perceived inequity. Halaby (1986) finds that workers who have been in an organization longer have different views on how important different criteria should be in employment decisions. Promotion-from-within policies help workers identify their interests with those of higher-level officials, as opposed to the immediate concerns associated with their current position, and is what many implicitly mean by commitment.

Organizations that make little effort to influence employee attitudes and behaviors through the use of employment institutions correspond to the "secondary" labor markets described by Doeringer and Piore (1971). They argue that employees in such labor markets have high rates of turnover and absenteeism, little if any attachment to the employer, and often poor attitudes toward their jobs. At the other extreme, organizations with many internal labor market characteristics fit Walton's (1985) definition of "high commitment" employers where workers have strong attachments—attitudinal as well as behavioral—and positive work attitudes. Hulin and Rosnowski (1985) note that such relationships may also differ within organizations and that the responses of workers in lower-level jobs are governed more by job and organizational characteristics than in upper-level management jobs where the external environment is more important. Presumably this is because upper-level jobs make greater use of the external labor market and alternative jobs in other organizations.

Industrial Relations as a Bridge

By focusing on the effects of employment institutions, industrial relations can make an important contribution to organizational studies and possibly to economics as well. At present, organizational studies is divided rather sharply between micro OB studies with its focus on individual behavior and explanations at the individual level and macro organizational theory (OT) with its focus on organizations and the external environment as a source for explanations. A research program that would establish relationships between organizational characteristics, such as employment institutions, and individual employee behavior could provide a bridge between the environment-organization studies of OT and the individual studies of OB. The need for a similar bridge between macro and micro economics is less pressing because the dominant macro paradigm, the "new" neoclassical economics, attempts to explain the macro economy explicitly in terms of the behavior of individuals. Recent arguments in economics, however, have attempted to explain macro phenomenon in terms of the effects of employment policies on individual workers (e.g., efficiency wage models, trade unions and insider-outsider models) which suggests both an interest, and a need, for such bridging explanations between macro and individual-level phenomenon. One way forward for industrial relations, therefore, is to focus explicitly on this middle level of analysis between the external environment and the individual. In doing so, it can make explicit use of the theories of both organizational studies and economics in an effort to contribute to both fields.

Endnotes

[1] An extended version of this paper will appear in Peter Cappelli and Peter D. Sherer, "The Missing Role of Context in OB Research," In *Research in Organizational Behavior*, eds. L. L. Cummings and Barry M Staw. Greenwich, CT: JAI Press (forthcoming).

[2] However, Stoikov and Raimon (1968) point out that high unemployment rates within one's own industry and firm may be directly associated with the quit rate because they signal to employees that the future for these organizations is bleak. This is likely where skills are not industry-specific so that opportunities are not limited to one's industry and associated with its current health.

[3] Turner and Lawrence (1965) found attendance differences within the same firm based on the location of plants in part because of differences in community and religious norms governing the importance of work. Herman and Hulin (1972) summarize early research showing relationships between structure and attitudes and behavior, and

Rousseau (1978) points to previous research which suggests that organizational characteristics may be better predictors of certain attitudes than are individual characteristics; Berger and Cummings (1979) update a similar review by Porter and Lawler (1965) and find support for a relationship between structure and attitudes and behavior; Pfeffer's review of the demography literature concludes that the compositional characteristics of organizations have an important effect on individual behavior and performance of organizations; Hulin and Roznowski's (1985, p. 64) review of research on technology also finds several relationships with individual behavior and attitudes.

[4] Examples include Williamson, Wachter, and Harris's (1975) analysis of idiosyncratic employer-employee relationships, Lazear's (1981) study of how seniority-based structures should affect turnover and performance and Freeman's (1981) analysis of the "voice" role played by trade unions. Such analyses still tend to be rare in economics and focus on theory rather than empirical research. Freeman and Medoff (1984) represent an important exception.

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"Paradigm-centered and Client-centered Research: A Proposal for Linkage"

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Nearly everyone is aware of the difficult and often unsuccessful relationships between so-called pure and applied social research. In some contexts, it seems a simple matter. The researcher chooses between doing research for the sake of the research community or for the sake of the groups under study. While a few cynics or perhaps romantics claim that whatever the academic research community does benefits society as whole, talk about reconciling these research communities abounds.[1] State agencies, professional school accrediting boards, and the private sector lament the weakness of applied research and the social irrelevance of academic research. Nonetheless, academic institutions, with few exceptions, continue to reward the pure over the impure and disregard the intellectual achievements and potential of the applied research community.

This paper relies on a distinction I make between client-centered research and paradigm-centered research.[2] This terminology points out that both academic researchers and action agents conduct research. Their clients and their procedures are different. I believe that we must link the two research communities if either is to do its job competently. Because of the existing hegemonic view of research, the client-centered research community must take the first step. Client-centered researchers must come to terms with their long-ignored problems of research reporting before collaboration is possible. It does no good for the two communities to continue as they are: two armed camps lobbing shells into each others bunkers while taking each incoming shell as yet another sign of their own superiority.

Four experiences brought home to me the need to focus on the problem of writing in client-centered research. The first was four

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years of participatory action research in the Fagor Group of industrial labor-managed cooperatives of Mondragón which led to a book manuscript co-authored with five cooperative members. The second was a 6-month stint as a consultant to Cornell University's Programs for Employment and Workplace Systems in the School of Industrial and Labor Relations Extension Division. The third was an international network meeting of organizational development people at the August 1989 Academy of Management meetings where we discussed problems of writing and publishing action research. The final experience was two weeks of lecturing in Norway at the Norwegian Institute of Technology in Trondheim and at the Work Research Institutes in Oslo where we again discussed problems of writing and publishing action research. What these experiences had in common were lengthy and difficult discussions about writing up client-centered research.

One might logically ask what the issue of writing has to do with the relationships between the paradigm-centered and client-centered research communities. The answer is *everything*. Writing is a core problem and an essential mechanism by which research communities both communicate and legitimate their approaches.

Since classical times, rhetoricians have recognized that writing is a form of thinking and acting. The writing process and the conventions that surround it are part of the analytical process. The oft-repeated foolish phrase "That is just rhetoric!" sums up current ignorance of this fundamental point. A by-product of this ignorance is the failure to understand that forms of writing necessarily and productively influence the structure and content of research.

We all know this on some level. On more than one occasion, I have found a graduate student in my office just back from a year in the field somewhere. He or she brightly says: "I have finished my research. Now I have to figure out what to write about." At that point, we all know something is fundamentally wrong. If the researcher did not conduct research with the writing project in mind, converting the results into prose after the fact is excruciating and the product is usually mediocre.

In academia, we do not think about this problem in established fields where the forms of writing are well set. After all, one of the signs of maturity of a discipline is agreement about the form its research reports should take. Laboratory reports, the ethnography, the economics-sociology-psychology-political science journal article are all well-known forms. They were invented and refined in the recent academic past and they are learned as part of professional socialization. Not writing in this form makes one a renegade, a fool, or simply an unnoticed (because unpublished) silence.

I contend that current forms of writing available to social scientists are totally dominated by a "paradigm-centered" framework which makes effective writing about "client-centered" research all but impossible.[3] This paradigm-centered framework does violence to the client-centered research experience and makes writing irrelevant to both the clients and the client-centered researchers. This situation serves to maintain the academic political power of paradigm-centered research. That rhetoric is central to this problem is clear when paradigm-centered researchers regularly repeat the claim that client-centered researchers "just tell stories." This implies that paradigm-centered researchers do something else, namely science, which by implication is a higher form of intellectual activity than storytelling.

Since storytelling is the supposedly mindless activity we client-centered researchers engage in, I will recount three stories to make my point clear. The first deals with my participatory action research project with the Fagor Cooperatives of Mondragón. I have reported on this work briefly in a number of publications.[4]

Basically the project consisted of a lengthy participatory action research process with the collaboration of a shifting group of 20 or so members of the cooperatives. The focus of the research was the examination of the current state of organizational culture and member commitment in the cooperatives. At the time, the cooperatives were suffering from the Europe-wide recession and were concerned about member commitments to collective goals. The process was exciting and rewarding. It offered insights that help complicate our view of the internal diversity of successful organizations and in the discovery of the high degree of simultaneous conflict and consensus in this particular example of industrial democracy.[5]

As the only professional social researcher in the group and a Basque specialist, I contributed theoretical, methodological, and anthropological materials to the process and co-guided it from beginning to end. At each major point in the process, I advocated the writing of a report and the group agreed. While the writing was never easy, I got easy commitment to writing reports. Reports are common currency in business and our report was a product to show the membership that at least we were doing something.

As we began to near the end, however, I argued that we should co-author a book because our results and interpretations embodied a basic revision in the view of the Mondragón cooperatives. That proposal was much less readily accepted. The very word "book" cast a pall over this group of intellectually alert, educated collaborators. All of their insecurities as novice researchers surfaced again.

Since then, the writing process vindicated this decision. Writing the book was a painful process for them, I think, because they assumed they could not do it. Books are things academics write. Long reports are what they know how to do. Further, they initially felt that writing a book was a waste of time because they had to deal with the pressures of business and action. In the end, the writing process produced most of the important analytical conclusions that they took away from the project and applied to the cooperatives. They discovered that writing is indeed a form of analysis and that the study would have been far less meaningful without the book.

The second case has to do with Programs for Employment and Workplace Systems (PEWS) at the School of Industrial and Labor Relations at Cornell. This organization, located in the Extension Division, has sought to enhance its connections and reputation among the resident faculty in the academic departments, but with limited success.

The radically different mind sets of the PEWS members and the resident faculty struck me. PEWS members are attracted and driven by the needs of their client organizations. Academic faculty are attracted and driven by the paradigms and acceptance of their research community. As a result, a division of labor has ensued. Action agents do not write or think theoretically and academic faculty do not write or think in terms of the application of knowledge.

During the period I worked with PEWS, I suggested that PEWS try a reconciliation of these positions by suffusing their client-centered processes with research dimensions. To develop a model of this approach, PEWS undertook a pilot project at a nearby manufacturing plant where PEWS had a contract. In this plant, implementing the new manufacturing systems (manufacturing cells, total quality, statistical process control, and just-in-time) were the central problems they faced.

As an experiment to increase PEWS' effectiveness, we overlaid the early stages of an intervention process with a research perspective. First, PEWS had gained access, basic familiarity, and an initial contract with the plant. Well into the process, I, operating as a professional social researcher, accompanied the PEWS staff member to the plant for two days as a participant-observer. During that time and in written analysis afterwards, I raised questions and pursued the issues raised by his observations. This helped make the intervention process accessible intellectually to others not directly involved.

Next we three joined other PEWS members and two social researchers visiting the School of Industrial and Labor Relations. Together we ferreted out the research issues relevant to this plant. This provided an opportunity for the PEWS personnel to inform the others about the plant's problems and to cause them to raise questions. The question and answer process refined the issues for all involved. An array of important research questions emerged, along with an inventory of further information about the plant that the PEWS consultants needed.

The process pointed in two directions. First, together we identified the larger issues of which the events at the plant were an example. Two large families of issues emerged: the organizational impact of new manufacturing systems and models of organizational change involved in creating manufacturing cells. These, in turn, raised issues about the larger social meaning of the new manufacturing. They also referred to the difficulties organizations face in modeling organizational changes.

Second, we identified what the research literature contained on these issues that could be useful in the plant. This involved forays into the literature on organizational learning, models of organization, and specifically on the new manufacturing systems.

Third, we suggested that the PEWS staff develop the basic data needed to address these questions via study-action teams composed of plant employees. Experience with such teams has shown that they can become very knowledgeable quickly. They often become a positive part of the change process themselves.

Finally, we organized and collated these research materials which provided a set of good theoretical and methodological perspectives for the PEWS staff to deploy at the plant. Had funding been available at that point, the social research issues were as clear as the client's needs. Comparative research through library and fieldwork on elements of the new manufacturing systems deployed at the plant was possible. This kind of research would have been exciting to the academic faculty of ILR both for its research value and utility in providing materials for teaching. In reality, PEWS and other extension programs constantly face problems at the cutting edge, where in fact their clients live. A body of research built on these experiences could serve as a tracking device for students of industrial society.

What prevented this from going forward? Organizationally, it would have required major changes. The PEWS members would have had to balance their commitments to their clients with the disciplines of research by devoting time to reading, writing, and communicating with resident faculty. Resident faculty would have had to be willing to invest time in ferreting out the larger issues in the cases, organizing the relevant literature, and engaging themselves with projects in which action was an element. While the lack of motivation among academic faculty to do this is clear, What prevents action agents from taking some of these steps?

The third example comes from my recent experience in Norway. I was giving a seminar at the Work Research Institutes about Mondragón and mentioned in passing the writing problem we had in the project. For the next two hours, a large group of work researchers from what we see as one of the most successful and well-funded work research organizations in the world vented their frustrations over the writing issue.

Among the topics that came were the inability to "find time" to write because of the pressing needs of the clients. There were many statements of good intentions to get around to writing up the work soon. Colleagues greeted these with equal doses of skepticism because all had made the same promises to colleagues over the years.

We examined the problem from a variety of angles and I began to see again that the client-centered researchers in Norway accepted the standard research report as the intellectually proper form of writing about work research. This format focuses on theoretical developments and paradigms, not clients and social problems. It places the writing process at the opposite end of the continuum from the location at which good client-centered research occurs. The result appears to be a choice between good actions which are intellectually mute or good theory which has no connection to the world of action.

What did not come up in the conversation until I mentioned it was any challenge to the right and necessity that the paradigm-centered research community should define the terms in which client-centered researchers write. The most insidious form of oppression is that which is unnoticed.

Where do these three stories leave us? To my mind, the impasse between client-centered and paradigm-centered research will not be broken until client-centered researchers take issues of writing seriously. We must challenge the distinction between research and action by writing about it differently. At present, both sides of this debate are collaborating to maintain the status quo. On the one hand, a radical distinction between research and action frees action agents from the requirements of thinking systematically and linking their work to larger theoretical and interpretive questions. This, in turn, prevents the development of the appropriate forms of writing (and the implied community standards for judging excellence) for their work. On the other hand, it frees paradigm-centered researchers from studying problems that matter to society and from reporting their results in forms intelligible to the public. As divisions of labor go, this one is both well worked out and socially nihilistic.

What are some of the mechanisms by which we can achieve this reorientation? First, client-centered researchers must recognize that writing is a form of thinking. Without writing (including thoughts about the form reports should take) from the first day of an intervention, they will inevitably reproduce the split between action and research. To do this requires breaking habits of mind acquired in the university and supported by everyday experience. It also requires dropping the arrogance that goes with seeing oneself as superior to academics because one takes action. If we reject the academics' sense of the superiority of their reflections over our actions, then we do not have the luxury of playing the same game in reverse.

Second, we must give explicit attention to the rhetoric of client-centered research. The Change Research Network[6] is currently making an effort in this direction by examining the structure of successful examples of well-written, client-centered research. We can use well-argued and well-defended community conventions to set standards of judgment in client-centered research, just as has been done in all academic fields. High profile series of peer-reviewed publications on client-centered research are essential to this process.

Third, we must innovate organizationally by creating institutional locations where the client-centered and paradigm-centered communities can meet. My experience at PEWS shows that it is possible for a facilitator to stand on this middle ground and work across the client-centered/paradigm-centered boundary. We need explicit institutional designs and funding to accomplish this. Among them could be the inclusion of a "rhetorician," in my sense of the term, as an essential partner in the client-centered community to facilitate the debriefing/writing process and the development of community standards for writing.[7] Another mechanism is the explicit creation of institutes, centers, and programs aimed at achieving a blend of the two modes of acquiring and organizing knowledge.

Is this possible? Only if the client-centered community takes the initiative. The paradigm-centered community will not invite client-centered researchers in willingly. It is necessary for the client-centered community to develop its own standards, institutional structures, and tactics for demonstrating the research potential of client-centered activity. If we do so, I expect we would see an important increase in public support for social research because the public might come to think that social research is good for something.

Endnotes

[1] See, for example, Lynton and Elman (1987).

[2] I developed the terminology "paradigm-centered" versus "client-centered" research while consulting with Programs for Employment and Workplace Systems at the School of Industrial and Labor Relations of Cornell University. The purpose of these terms is to point out that both groups conduct research, but that the motive and constituencies for the research are different. Often it is made to appear that action agents do not conduct research, a ridiculous view. They do not conduct research with the same goals or using the same processes as the academic researchers. I then argued that linkage, not synthesis, between these two kinds of research communities is both possible and necessary for the benefit of both. I finally proposed the creation of an institutional structure, an Industrial Action Research Laboratory, within which this could take place.

[3] The terminology I use in distinguishing between paradigm-centered and client-centered research is new; the distinction is not. My aim is to stress two points. Both forms of activity involve systematic research activities. Practitioners of both may do the work better or worse, but both are engaged in forms of research. In addition, I want to emphasize for whom the research is done. I reject the notion that paradigm-centered research is better, more scientific. There are ample opportunities for scientific rewards in client-centered research, as we have argued elsewhere (Whyte, Greenwood, and Lazes, 1989).

[4] See Greenwood (1988, in press) and Whyte, Greenwood, and Lazes (1989).

[5] The resulting manuscript now has been published. (See Greenwood, González, *et al.*, 1990).

[6] The Change Research Network is a voluntary professional group coordinated by R. J. Bullock. A subgroup is working on the problem of the rhetoric of action research. Those interested should contact R. J. Bullock, *Change*, Box 230400, Houston, Texas 77223-0400.

[7] This is a complex matter and merits a longer discussion. This is the role I played for a time in PEWS. It is difficult to find people with a strong, conventional academic background and yet with an abiding interest in client-centered issues. If they can be found, or better, trained, there are still other problems. There is a potential for exploitation in this relationship. A rhetorician-facilitator can harvest the ideas of practitioners and convert them into workers in an intellectual sweatshop. As in most human situations, there is no easy answer. Clear understandings of the potential abuses, implicit and explicit contracts regarding intellectual property rights, and other such arrangements need to be worked out. Complex though they may be, they offer no more serious dilemmas than have been faced earlier in the development of protections for human subjects in the research process.

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Integrating Workplace Development and Social Research—The LOM Program in Sweden

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"To live well, a nation must produce well." The opening phrase of the report of the MIT Commission on Industrial Productivity (Dertouzos et al., 1989) could also stand as a motto for the Swedish Leadership, Organization, and Codetermination (LOM)-program. Like the commission, this program for organization R&D sees the cultivation of a new "economic citizenship" in the work force as essential to promote social and economic values. Only if a positive attitude towards work, codetermination, technological change, flexibility, etc., prevails and inspires new work roles and patterns, will old industrial countries like the U.S. and Sweden be able to hold a strong position in the world economy.

The LOM program is in the Scandinavian tradition of national campaigns of reform in working life, which started with the Norwegian industrial democracy experiments (Emery and Thorsrud, 1969) and were followed by similar projects in Sweden. The present program, initiated in 1985, has emerged out of an agreement to which the labor market organizations and the Work Environment Fund (a national research fund financed by a universal wage tax) are parties. The purpose is to initiate and sustain a development which has working life as a whole and working life research as its target.

The 1980s can be seen as a time of consideration following the most active period ever in labor relations reform and legislation in Sweden, with a totally new framework of legal rules. The reforms, however, failed to realize expected new participatory relationships at the shop floor. Employers and trade union spokespersons treated codetermination as merely an issue of representation. The hoped for benefits in terms of involvement and creative contributions from workers were

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largely frustrated. The LOM program is closer to the shop floor in its attempt to reform the 'economic citizenship' in Sweden.

The program is focused on R&D organization, practise, and theory. Any uniqueness to which the initiative might have claim is related to this integrative ambition—the three levels are seen as equally important and none should be given priority over the other. In the long run they will thrive only if seen in conjunction (Gustavsen, 1988).

The LOM Projects

Sixty-six firms and institutions are formally engaged in LOM projects. The rate of success at this stage (meaning that some kind of significant local process has followed) is around 75 percent. It is, however, most important that the model has started to spread on its own; similar meetings are being arranged independently of the program.

The research work is organized as a network of 48 researchers. Most of them have constituted, within their home university, an interdisciplinary group which is linked to a network of (mostly) local firms and institutions. Nine such groups have been established and are spread over the greater part of the country. Several academic fields are represented with an equal share for economists, psychologists, sociologists, technical engineers, and others.

They work independently but are joined by common seminars, conferences, and other activities. Many of the separate projects, but by no means all, share an interest beyond the formal arrangements in the same type of theory development. One example is a type of linguistic-pragmatic theory (Gustavsen, 1985) which is related to broader developments in social philosophy around authors like Emery, Trist, Habermas, and Foucault; another is related to interactive organization theory.

The Formation of Discourse

The Scandinavian Tradition

Research-supported systematic generation of new organization designs or work experiments has only been successful in certain limited parts of the manufacturing industry, (notably the Volvo and SAAB experiments); even less so, however, when researchers in a field situation have attempted to change existing organizations through the development of model cases.

The views expressed by some researchers in the QWL (Quality of Working Life) and sociotechnical tradition about the state of work life research was on the whole shared by LOM. Some difficulties experienced in this tradition were summarized as follows (van Beinum, 1988):

1. Effective descriptive and analytical models such as sociotechnical systems analysis are insufficient as strategies for organizational learning and cultural change.
2. Many approaches are based on generalized solutions and cannot accommodate local conditions and situationally determined variables.
3. Diffusion is not a linear process of simple causality. The traditional leader-follower approach has proven to be of limited value and a better understanding of the process of diffusion is a matter of urgency.
4. The sustained and joint involvement of management and labour is a first prerequisite for an effective reconstruction of working life. Many projects which are coming to a halt have been suffering from lack of leadership and commitment, or an insufficient involvement of trade unions, or from circumstances which do not facilitate co-operation between management and labour.

This view is similar to how the LOM group evaluated the Swedish situation. After a positive development, problems emerged in the experimental sites. The projects seldom got beyond the workshop level and rarely affected management. When external support was withdrawn, local development faded and diffusion to other enterprises of results successful was almost nonexistent.

Generative Ability

The new strategy as originally conceived by Gustavsen (1985) and others evolved along several themes. The basic unit of change in LOM is not a single enterprise but a cluster of four enterprises or a broader network, often located in geographical proximity and cutting across industrial boundaries. The idea is to support 'ecologies' of linked organizations, which are seen as a basic model for further industrial development. Interorganizational dimensions are brought into the change process from the start rather than after the event.

A conference methodology which represents dialogue criteria in a highly operational form is broadly applied as a linking mechanism throughout the program. Within each participating organization, the project work is designed so that all major levels and interest groups can become involved. The idea is to cover a broad range of different topics and issues rather than focussing on only one. The various strands of development are linked to each other by dialogues.

Finally, in choosing which specific problems to work with in each enterprise, researchers try to steer the interest toward topics of particular relevance for the issue of dialogue, such as the development of the linguistic resources of the enterprises and the conditions for everybody's participation.

Democratic Dialogue

The LOM program has avoided many of the concepts previously developed in working life research. Reference is seldom made to industrial democracy or sociotechnical theory, although both are clearly relevant. They are seen as associated with partial perspectives and often misinterpreted in the general discussion. Democratic dialogue connotes some of the meanings of these concepts and serves as a sensitizing normative concept of importance both in the developmental and the research process. Its theoretical implications have been pursued within a linguistic-pragmatic frame of reference influenced by German critical theory, the Frankfurt school, and French poststructuralists (Gustavsen, 1988).

At an operational level the following criteria for a democratic dialogue are posited by Gustavsen:

- All participants should be equal and active in a process of exchange of ideas and arguments.
- (Work) experience is the basis for participation in discussions.
- The participants should tolerate an increasing degree of difference of opinion.
- The dialogue must continuously produce agreements which can provide platforms for practical action. The major strength of the democratic system is that it has the benefit of drawing upon the widest range of ideas which inform practice.

The concept of democratic dialogue has proved to be both inspiring and provocative in the research process. It is linked to the capability to generate problem solving and to frame new ideas and new understanding. Democratic dialogue tries to reverse the process analysed and criticized by Habermas in his application of the distinction between system and life sphere. Instead of isolating the latter from the former, the intention here is to liberate work by the use of life sphere communication within the organization. (Allwin, 1989)

The LOM Conference

The LOM conference is the most important device by which to develop projects and start a democratic dialogue. Compared to the group dynamic techniques of the OD tradition, the LOM conference is simple in design, but it has proved to be highly effective in attracting workplaces and formulating a shared platform for the individual project.

The design of the conference is ideally a procedure in several steps: A project group is set up from four firms or institutions (Gustavsen and Engelstad in 1986). The groups constitute a vertical slice of the work organization with line management at different levels, one or two workers, and possibly representatives of staff experts and the union. Over a period of one-and-a-half days, four topics are discussed. The first relates to visions for the firm or workplace over a future of say five years. The second is problems which are likely to be encountered in trying to realize the vision. The third is about ideas and suggestions for how problems can be overcome. During the fourth group session the participants start to define a plan for how to implement some of the ideas presented during the conference.

Crucial for the success of the approach is the composition of the different groups during the four rounds of the conference. The first session is normally in horizontal groups; management from the participating firms meet in one group, middle managers in another, workers in a third, etc. The second is formed diagonally by mixing functions from different organizations. The third session is mixed similarly but in new groups, and in the final gathering participants from the same workplace meet.

Besides these, there are a few more rules. To emphasize the role of the participants in the project, there are no presentations by the researchers. All steps in the process are voluntary and it is possible to withdraw at any time. Discussions should respect time constraints; it is not a discussion without end or purpose, but an approach to the creation of practical agreement on complex topics across organizational levels. The purpose of the meeting is twofold; discussions and conclusions. The latter are reported in plenary sessions and documented in a conference report distributed to the participants after the conference.

The subsequent work is, of course, the crucial part of the generative process, that which takes place in the firm in project groups, where the agenda set by the initial conference is further refined. How this stage is organized varies considerably and is locally controlled. Essential is that the democratic dialogue should be respected during this phase, which ideally should be open-ended.

Role of Researchers

Social sciences often relate to practice only through a number of mediating links and see a separation of roles and discourses between research and application as essential. The research groups in LOM share common guidelines in an approach to practice, but more importantly, practice a common interest in the development of the theory of practice and ideas about change processes rather than concrete models for change. The LOM researchers participate in their roles as researchers, not consultants, etc., but they should do this in an interactive relationship.

One of the LOM groups has laid down some concepts which guide their work as researchers, and which are more or less typical (Eriksson et al., 1989): They describe their role as related to developments in four areas:

- organization—by changing the work organization the organization as a whole is changing,
- methods—the aim is to change the process by which problems of work are handled and to develop the strategic methods for change in a wider perspective,
- competence—the capabilities needed to efficiently take part in a democratic dialogue and apply LOM concepts in a change process, and
- networks—the aim is to establish cooperative forms at three levels: task oriented networks between groups who share a problem, organizational networks between groups who need effective coordination and exchange of information and regional networks and contacts with other firms and institutions who can provide useful information.

Reflections Over Research Experiences

It should be clear from the above that there is no joint statement of theory or conclusions emerging from the LOM projects. Accordingly, the few remarks given in this section are my own and not necessarily shared by my colleagues. A phrase from Foucault, "discourse formation," has been used to describe the ambitions of the program.

As yet, none of the LOM projects have been completed and written down in research reports. The following remarks about the preliminary results of the LOM-program are based on work reports, seminar discussions, and my own experience.

- Most importantly, so far, the conference model has been applied successfully. This is indicated in evaluations where a heavy majority (over 80 percent) has found the conference setting ideal and preferable to other alternatives they have experienced. On a 5-point scale the average rating for the group sessions is above 4. The results of the evaluation study are confirmed by the fact that the model is being frequently copied. The model in itself is distinctly simple, which makes the message clear to participants that they are responsible for its success or failure. It is likely that the LOM-conference will be established as a valuable form of interaction between formal management/union negotiations and workplace meetings.
- The conferences in themselves are insufficient, in a research perspective, as a generative mechanism. Where conferences have not been pursued with renewed contacts and support from researchers or others with a special assignment to this, local development has rarely followed.
- The initial stages of the LOM approach are normally highly evaluated by concerned persons, as seen from the formal evaluations. However, there is a difference mainly to the effect that employees with lower status and position find the dialogue extremely rewarding, while there might be more nuances among professionals and staff. High-level managers and politicians (who have been brought in to some public sector projects) find the discussions highly useful.
- The process is vulnerable to disturbances like changes in ownership or holders of key positions in the company. Several projects have been postponed or discontinued because of management changes.
- The type of changes in actual work design or practise that have taken place are very different. In some cases, conferences have been used to introduce the idea of democratic dialogue into a major reconstruction project, like in two postterminals. In other cases, a hospital, a day care nursery, or small shop, results are seen mainly in attitudes and patterns of communication.

• There are only one or two examples of a successful local network of firms so far. In other cases, contacts between individual units in a "group of four" have been rather sporadic and the projects have failed to meet their ambitions in this respect.

• A major achievement of LOM is that it is beginning to reverse the "negative Hawthorne effect." Because in many cases expectations from managers are disfavorable to research experiments, projects have an uphill fight. This is gradually changing, and expectations related to LOM are, especially in the public sector, favourable today, and there is a surplus of workplaces that would like to join the program.

Finally, to comment on the approach from the research point of view, the LOM program has been successful in establishing a *discourse* among work life researchers. The concepts developed at the initial stage of the program are basically heuristic in character, and they are not precisely defined, operationalized, or applied. Exactly this fact has contributed to a creative process of discussion and writing to which the concepts are both inspiring and provocative. The conclusion is that an important part of research planning is better based on "scenographic" ideas than traditional academic rigour.

Interactive Rationality of Organizations

There are two conceptual points which might indicate the directions in which the LOM program has contributed information about the theory and practice of workplace reform. One is about interactive rationality of organizations and the other action research.

Basic managerial strategies of two kinds are pursued in response to perceived dysfunctional behavior in organizations. One is to further enforce automatization, standardization, and regulation of people and processes by means of technical rationality. The other is to reestablish the importance of human interactions in the design and execution of work. In many firms and public institutions which have moved beyond mass production into customized production and services, the second alternative is the major challenge today. Interactive rationality must be considered where technological, bureaucratic, and professional rationalities are insufficient.

Modern organizational theory tends to stress the contextual uniqueness of problems and situations and the need to accommodate local conditions and situationally determined variables. The model of technical rationality presupposes a type of solid knowledge with four essential properties; specialized, firmly bounded, standardized, and scientific (Schön, 1983). These conditions are rarely met in modern industries. In actual practice value judgements, complexity, uncertainty, instability, and social conflict interfere with plans and call for a quite different way of handling the organization.

Organizational success depends heavily on effective interactive processes vertically and horizontally with managers, with other workers, and with clients. Interactive rationality can be defined as a system of norms related to effective social transactions between people in an organization. Effective organization depends on an appropriate balance between a number of rationalities. The structuring of work (by rules) and specialization of work (by roles) must be weighed against effects on interactive linkages, which can be highly effective in finding synergies and developing low-cost horizontal exchange. The issue of transaction costs, as raised in the theory of the firm (Williamson, 1976) is related to this question.

The LOM program is helpful in developing the interactive rationality of organizations by use of its main strategies; the search conference, network building, and a democratic dialogue. Work practices under conditions of uncertainty, instability, and multiple values are developed in a process of exchange of information, critique, help, and support. Often the quality of the work depends on an active relationship with a client—where the latter is seen as a social subject rather than a social object (a case), as often happens in bureaucratic organizations. There are three points to be made in connection with interactive rationality which indicate the significance of democratic dialogue in organizational processes:

1. Practical competence in situations that need local accommodation is of a type which thrives in the right social atmosphere but shuns detailed instruction, control, and supervision. In this context, organization means locally developed responses and arrangements. Management stimulates preconditions for collaboration and the development of incentives for an ongoing organization-building process.

2. From the perspective of technical rationality, professional practice is a problem-solving process. In a situation differently characterized by turbulent environments, interconnected problems, and an indeterminate future, the issue of *problem setting* is a key issue (Schön, 1983). This is the process of deciding on decisions to be made, ends to be achieved, and means to be chosen.

3. Interactive organizational relationships, vertically and horizontally, can be effective alternatives to formal hierarchical integration. Exchange of this kind depends on the establishment of a social infrastructure of language, norms, and channels. To the extent that an informal exchange relationship is established (even on concrete levels such as borrowing inventory, asking for help, etc.) it is essential that a trustful relationship exists and that the organization remembers services and then services in return. A consideration of low- and high-trust dynamics should enter into the evaluation of different organizational choices (Fox, 1974). Work qualification is often of a tacit rather than a well-defined and articulate character. A skilled worker depends on numerous tacit recognitions and judgements. In situations of uncertainty, instability, uniqueness, and value conflict, practitioners rely on what is called reflection-in-action. Individuals are rich in types of knowledge which they are unable to verbalize directly but which is manifest in judgements and actions. They are often unaware of having learned these things. Reflection-in-action is a process by which practical knowledge is developed (Schön, 1983). The manifestations of knowledge in these instances are mainly in action and in colloquial discourse. Rather than scientific facts or theoretical generalizations they take the form of types of "family-resembling examples." A skilled person develops a repertoire of expectations, images, and techniques for learning. Knowledge is furthered by reflection over ongoing work or trial-and-error.

When someone reflects-in-action, he or she becomes a researcher in the practise context, says Schön, and constructs a theory of the unique case where his or her inquiry is not limited to a search for means which are determined by a prior agreement about ends. He or she defines means and ends interactively as a problematic situation is framed. Thinking and doing are integrated.

My understanding of democratic dialogue relates directly to this kind of practical epistemology. A major critique of Schön, and before him, Polanyi and others, is that they tended to see the development of practical skills and knowledge as solitary. The experience in the LOM program is rather that reflection-in-action is at least as much a collective and interactive activity. The reflective query about values, situations of uncertainty, instability, etc., is not an internal monologue, but typically involves an exchange of views and observations, questions and answers—dialogue-in-action.

Action in Social Research

An organization appears as different images (Morgan, 1986). If we see an organization as the outcome of the interaction of motivated people, one essential aspect is to understand and study motives and interactions. We cannot, however, expect to learn about these things merely by asking or probing into organizations by traditional scientific methods. The motives are, if the above analysis of practical epistemology is accepted, often hidden to the persons involved.

Dialogue-in-action, like reflection-in-action, is a process that can be learned by close participation. By initiating action, a process is begun that eventually will disclose meanings and interactions by which practice and theory evolve. The information is, however, of value not as statements of general empirical facts or theory building but as individual examples and patterns of organizational behavior.

Action research falls within the general category of constructive science. It is not basicallly descriptive, neither is its task one of critical science (Kallenberg, 1989). It implies a special link between theory and practice. The point of departure for action research is not a theory about how organizations are, or ought to be, but rules about how to create or understand local theory related to such questions.

This approach to interactive rationality is built on the assumption that people themselves interpret their social experiences according to complex and not always cohesive local theories (which are better labelled social patterns). Understanding is related to pattern recognition. Instances of tacit or intuitive knowledge are highly significant in this context. Effective theories of practice have the form of paradigmatic patterns, which are recognised and treated as good learning examples rather than a causal theory (Margolis, 1987).

Action research is a method whereby researchers can help in the development and formulation of new paradigmatic patterns. The result of good action research is that we either extend the set of representations of social activities, or make representation more effective by formulating (discovering) richer patterns. The relevance of a pattern is a matter of judgement. Action research might also be able to formulate meta-theoretical positions of a generalized type, just as it formulates meta-theory about the formulation of (local) theory.

Conclusion

Perhaps no better conclusion can be made than to once again quote from the MIT Productivity Commission: "We close with a suggestion inspired by our own experience in carrying out the work of the MIT Commission: We call on interested groups throughout industry, government, and the educational system to ask themselves, as we did, what have been the recurring weaknesses and strengths of current industrial practice in domains most familiar to them and to ask what they in turn might do to help improve the nation's productive performance." (Dertouzos et al., 1989)

The statement sounds to us almost like the invitation to a LOM-conference. The Commission talks of the way people and organizations interact and that individualism needs blending with cooperation.

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DISCUSSION

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Despite the breadth of its title, this symposium deals chiefly with the relationship between the basic (paradigm-oriented) disciplines—such as economics and organizational behavior (OB)—and those which are applied (problem- or client-oriented)—such as industrial relations (IR). This is a problem for IR people, such as Cappelli, and for those interested in changing behavior, such as Greenwood and von Otter.

Forty-three years ago, when the IRRA was founded, this was hardly a problem. Organized by rebels grumbling over the neglect of labor economics by the American Economics Association, the new organization sought to bridge the gap between practitioners and scholars from various disciplines and to be a neutral meeting spot for labor and management. As professors who moonlighted as arbitrators, most of its earlier leaders were both practitioners and academicians.

Since then much has changed. By the 1960s social sciences were moving toward disciplinary orthodoxy. With the advent of the computer practically all the social sciences became more quantitative. Research has become deductive rather than inductive—more interested in developing theory than in understanding problems. Labor economics, once concerned chiefly with institutions, reintegrated itself with classical economics and now makes the individual its unit of analysis. Micro-OB has also become more integrated with cognitive psychology; despite its name, it is individually, rather than organizationally focussed.

Given the encroachment by both economics and OB on IR's previous exclusive jurisdiction, Cappelli argues that IR should stress its comparative advantage, which is at the organizational level. At one time IR people specialized in unions and union-management relations. Capelli suggests we broaden our horizons to encompass all employment relations, especially internal labor markets. Thus, in

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dealing with problems such as absenteeism and turnover, IR could serve as a bridge between economics and OB and even between micro- and macro-economics and between micro-oriented OB and macro-oriented organizational theory. Certainly in a period of declining unionism, academic IR has an occupational interest in asserting such a wider jurisdiction. This might also protect itself against the growing switch to human resources management, which typically has a micro, individual orientation. Further, an IR focus on employment institutions may provide a paradigm, a systematic way of analyzing problems.

Greenwood and von Otter represent interests which were once called organization development (OD). Greenwood is concerned with the relationship between client- and change-oriented research (such as OD) and that conducted by mainstream paradigm-oriented researchers. His concerns closely parallel those of labor educators (see their symposium elsewhere in this volume), who feel their efforts are devalued by traditional IR people. In turn, as Cappelli points out, traditional IR people feel their domain (and status) is threatened by economists and OB. It's a vicious pecking order.

Twenty years ago OD flourished as a field in academia and business. The area of OD was concerned with changing organizations. Today OD is largely forgotten. Why? Let me suggest three reasons. First, aside from Lewin's three-phase, unfreezing-change-refreezing model, OD never really developed a theory. Second, OD techniques proved resistant to validation. Indeed, the process turned out to be almost unanalyzable. About all the research could show was that OD works in some situations but not others, and that the personality of the individual change-agent makes a big difference. Third, OD tended to be a religion more than a science, and so it was repugnant to the central values of increasingly finance-oriented business schools. ("Negotiations," a very popular business school course today, serves the same action-oriented curricular function that OD once served, but it gets by because it is presumably tough.)

In any case, OD died. Somewhat similarly, schools of social welfare and public policy are becoming increasingly quantitative. Even when they make public policy prescriptions, they are more concerned about the desired end-state than how to get there.

Despite OD's downfall as a field, the problems it addressed are as important as ever. Greenwood suggests action researchers suffer from failure of rhetoric, an inability to communicate adequately with paradigm-oriented people. This may be a classic OD problem:

improving relationships among groups with different cultures. Greenwood implies another failure: their unwillingness to meet "the requirements of thinking systematically and linking their work to larger theoretical and interpretive questions." He may be right.

Von Otter describes Leadership, Organization, and Codetermination (LOM), which he views as a partial solution to the failure of recent Swedish "labor relations reforms and legislation" to "to realize expected new participatory relations at the shop floor." The heart of the technique is a day-and-a-half conference of workers, managers, and staff experts which meet "without presentation by the researchers or others."

This sounds like OD, though I am left somewhat confused. How do LOM groups differ from "cousins' groups," which were frequently used in OD? Networks apparently play an important part in the diffusion of LOM. I wonder, too, how these networks relate to the networks extensively discussed by Robert Cole as being important for the diffusion of QWL programs in Sweden, Japan, and the US.

LOM operates "within a linguistic-pragmatic frame of reference influenced by German critical theory, the Frankfurt school, and French post-structuralists" including Habermas. LOM seeks to establish a "democratic dialogue," the long-term result of which will be "the creation of a new language." At least we have a paradigm. But it is one which U.S. IR people may find hard to understand. Indeed, von Otter's paper suffers from the communications problems which Greenwood finds so common.

XIII. CONTRIBUTED PAPERS: LABOR ECONOMICS

Earnings for Scientists and Engineers

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In an economy such as ours where there is concern with competitive position and increasing dependence on the development of sophisticated technologies for economic growth, the skilled professional labor needed to advance that technology is an important economic resource. Considerable attention has recently been given to attracting more students to science and engineering fields and strengthening their technical education. Comparatively little attention has been paid to how to make the best use of those who are already trained and in the work force.

The first phase of the study was to document a set of relatively well-known, stylized facts about the career paths for scientists and engineers. In the next phase, human capital theory was used to generate a set of hypotheses of how earnings would vary if career paths were a function of human capital investment as opposed to market structure. These hypotheses were tested, and the results were then analyzed according to how they varied from what would be predicted by human capital theory and what these inconsistencies might suggest about an underlying structure in these labor markets.

The data used in this study were from the National Survey of Natural Scientists and Engineers, a combination of retrospective and panel data collected from a random sample of self-declared scientists and engineers from the 1970 current Population Survey. The data collection was sponsored by the National Science Foundation. The first survey was administered in 1972, with subsequent follow-up

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surveys every two years through 1978. The data for this paper come from the 1972 survey only, which included retrospective information about each respondent's job at the time of the survey plus two preceding jobs. Therefore, there are potentially job histories of up to three jobs for each respondent. Because the respondents were at various stages of their careers at the time of the survey, it was possible that some people had not yet been in the labor force long enough to have had three professional jobs; and, others had had more than three so that the survey did not cover their entire work history. Information collected included detailed demographic, educational, work history, and job content data. The final sample was from 6,469 white males, all of whom had a minimum of a B.S. degree upon entering the labor market. Just under 60 percent of this sample described their entire professional work history up through 1972 in the survey.

Career Paths of Scientists and Engineers

The stylized facts about the work experience of scientists and engineers are as follows. This group entered the labor force having made a very large human capital investment in itself in the form of a rigorous, specialized technical education. However, by mid-career, for a variety of reasons, many technically trained workers turned to managerial careers. For some this choice was an easy one, but for others it created a conflict. In essence, most nonacademic scientists and engineers are eventually confronted with having to choose between two conflicting work orientations: one to their profession and its associated jobs that are of a technical problem-solving nature; and, the other to the firm, where job content emphasizes the management of firm resources. One scholar in the field described this dilemma as a choice between "either following one's technical bent but becoming isolated and unrecognized within the organization, or moving into management and losing contact with one's technical goals and competence" (Bailyn, 1982b, p. 42). This problem is sometimes referred to as the risk of technical obsolescence.

Existing literature on the work experience of scientists and engineers tends to be based on the theoretical supposition about the inherent conflict between individuals and groups. In this case, the conflict is between firms and technically oriented workers. This literature analyzes the problems, particularly that of technical obsolescence, and solutions in terms of that conflict. Researchers in this area are unified in their concern about the prevalent view that technical obsolescence is inevitable and think that this is an ill-conceived perspective of the problem and tends to generate inadequate solutions. The explanations provided in this literature of why technical labor eventually faces what is for many a negative choice all suggest that it is due to organizational bias.

One view is that the diversity of interests and talents of the individual workers is not matched by a comparable diversity of roles or rewards within the organization (Bailyn, 1980, 1982a, 1982b, 1982c; Leventman, 1981; Dubin, 1973). Some argue that technical obsolescence is created by firms that deliberately narrow job assignments, thus preventing the accumulation of new skills (Miller, 1974; Davis and Trist, 1974). Other researchers specifically address how earnings, promotion, and unemployment patterns are associated with age and orientation toward the firm (Dalton and Thompson, 1971; Kopelman, Thompson, and Dalton, 1973; Dalton, Thompson, and Price, 1982; Davis and Trist, 1974; and Thompson and Dalton, 1976) and challenge the link between actual technical competence and these outcomes. According to this view, obsolescence is a label created by the firm (Dubin, 1973; Leventman, 1981) and has little relationship with the actual technical skills of workers. A third view shows how this problem of perceived technical obsolescence changes under different economic conditions (Hall and Mansfield, 1975; Leventman, 1981).

The first objective of the study was to document the conventional wisdom about the career paths for scientists and engineers: that they may begin their careers working on technical problems but eventually a significant number move into managerial jobs. Within this data set, there were two possible measures of career path, referred to as SUPATH and OCCPATH. SUPATH is a variable constructed from a direct question about supervisory level. Only those who managed a major department or division or were part of the general management of the organization were classified as holding a managerial job. OCCPATH was constructed from the self-declared occupational variable. A job was considered managerial by this definition if this variable was coded as being one of four administrative and managerial categories.

Because there were potentially three jobs in each respondent's history, there were six possible career paths: all technical, all managerial, technical to managerial, managerial to technical, technical to managerial and back to technical, and managerial to technical and back to managerial. Because the survey captured some workers early in their careers and others late in theirs, the first three paths were considered to be consistent with the conventional wisdom about scientists and engineers.

Regardless of which measure is used, most of the sample follow the expected career paths (Table 1). Using SUPATH, 92.9 percent of the sample can be described by the hypothesized paths, compared to 95.4 percent using OCCPATH. The difference between the two is the result of there being fewer managers using OCCPATH than those using SUPATH. This simple frequency was taken as evidence in support of the conventional wisdom about the career paths of scientists and engineers.

TABLE 1
Frequency Distribution by Career Path

SUPATH	Career Path	OCCPATH
73.9	All Technical	82.5
4.7	All Managerial	4.6
14.3	Technical to Managerial	8.4
3.3	Managerial to Technical	2.4
2.8	Tech. to Mgr. to Tech.	1.7
0.9	Mgr. to Tech. to Mgr.	0.4

Earnings by Path

Within human capital theory, a distinction is made between general and firm-specific human capital; that is, skills of value in the general labor market versus those that are only of value in a particular firm (Becker, 1975; Mincer, 1974; Rosen, 1977). Because there is always some risk of turnover, the importance of this distinction is in its implications for who pays for, and receives, returns on the investment in the human capital of the individual worker. Applying this model to the labor market for scientists and engineers, we hypothesize that the potential for skill depreciation, that is, the risk of technical obsolescence, functions much like the risk of turnover and raises a similar set of questions about who pays, or receives, returns on human capital investment. Thus, each career path within the labor market for scientists and engineers can be seen as representing a different set of investment opportunities, with different costs, depreciation rates, and rates of return. These differences are expected to have implications for lifetime earnings, job mobility, and involuntary unemployment.

We hypothesize here that technical human capital depreciates more rapidly than managerial human capital. This is expected because the depreciation rate of experiential human capital is directly related to, among other things, the rate of technological change. As technological change occurs, the technical skills of scientists and engineers become less valuable unless those workers continue to invest in themselves and update their knowledge. Firms, however, will be reluctant to share the costs of human capital investment for two reasons. First, it is likely to act as general human capital, that is, be of value outside the firm. Second, depreciation is analogous to turnover in that, like turnover, the period over which the firm can receive investment returns is truncated. In contrast, the rate of change in firm structure will not change so rapidly, prolonging the period over which managerial human capital is valuable.

Extending the theory, there are then two reasons why earnings of technical workers will be lower and not rise as quickly as those of managers. First, lower technical earnings may reflect the ongoing cost of the continuing investment these workers make in themselves. Second, the rapid rate of depreciation may lead to an unwillingness of technical workers to make the necessary experiential investment because of the higher opportunity cost of investment, reducing the rate of wage growth.

In order to test this hypothesis, the following loglinear model was used. The basic model is:

$$(1)\quad \ln Y = \ln Y_0 + a \times F(t) + b \times G(t)$$

where $F(t)$ is firm-specific human capital and $G(t)$ is general human capital, both measured in time equivalent experience. Separating experience into prefirm and current firm, this can be rewritten as:

$$(2)\quad \ln Y = \ln Y_0 + a_1 \times F(t_p) + a_2 \times F(t_c) + b_1 \times G(t_p) + b_2 \times G(t_c)$$

where the subscripts, p and c, refer to prefirm and current firm experience, respectively. Since $F(t_p) = 0$ upon changing jobs, this can be rewritten as:

$$(3)\quad \ln Y = \ln Y_0 + a \times \text{EXP} + b \times \text{TENURE}$$

where EXP is the equivalent measure of general human capital, and TENURE is a combination of general and firm-specific human capital. Because path switching may take place within the same firm, the final version of the model, put in quadratic form to take into account diminishing growth rates over time, is:

$$(4)\quad \ln Y = \ln Y_0 + a_1 \times \text{EXP} + a_2 \times \text{EXPSQ} + b_1 \times \text{TEN} + b_2 \times \text{TENSQ} + c_1 \times \text{NONTEN} + c_2 \times \text{NONTENSQ}$$

where TEN is current job tenure and NONTEN is tenure in the same firm but prior to the current job. In order to capture the effect of career path, the path variable was entered in three ways: as a shift variable, as an interaction with each of the different linear experience variables, and as an interaction with each of the experience variables squared.

As Table 2 indicates, being on the managerial path will have a positive shift effect on earnings as indicated by the positive sign on PATII. In addition, earnings will grow more rapidly and growth will slow less quickly as indicated by the positive signs on PATIITEN and PATIITENSQ.

TABLE 2

Earnings Level Variables

Variable	Definition	Expected Sign
EXP	Pre-current firm experience	+
EXPSQ	EXP squared	−
NONTEN	Tenure in current firm before current job	+
NONTENSQ	NONTEN squared	−
TEN	Tenure in current job	+
TENSQ	Tenure squared	−
EXTEN	Interaction of EXP & TEN	−
NONTNTN	Interaction of NONTEN & TEN	−
PATII	Dummy variable for manager	+
PATIIEXP	Interaction between path & EXP	0
PATIIEXPSQ	Interaction between path & EXPSQ	0
PATIINONTEN	Interaction between path & NONTEN	0
PATIINONTENSQ	Interaction between path & NONTENSQ	0
PATIITEN	Interaction between path & TEN	+
PATIITENSQ	Interaction between path & TENSQ	+

Table 3 shows the results of the earnings model. The dependent variable is the log of earnings in 1972. The results in the first column are from the model that was estimated using SUPATII and those in the second are when OCCPATII was used. These results provide limited support for the human capital hypothesis and can be interpreted as providing some indication that market structure, rather than human capital accumulation, explains the difference in earnings between managerial and technical workers. As can be seen in both sets of results, the coefficient for path by both definitions is positive and significant, suggesting a one-time upward shift in earnings as a result of being on the managerial path. The coefficients on the interaction variables between path and current job tenure and tenure squared

TABLE 3

Estimates of Effect of Career Path on Earnings

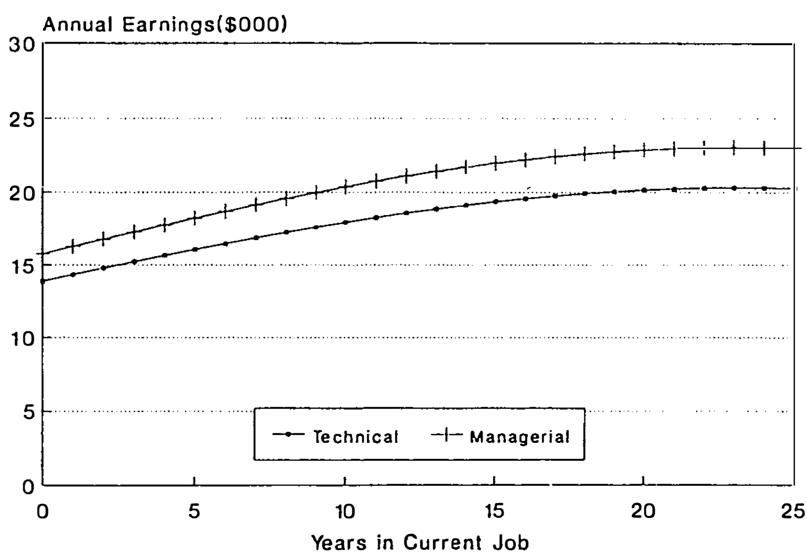
	SUPMAN	OCCMAN
INTERCEPT	9.321 (342.862)	9.27 (317.68)
MA	0.065 (5.116)	0.598 (4.631)
PHD	0.283 (18.284)	0.274 (17.356)
EXP	0.029 (12.521)	0.031 (14.325)
EXPSQ	−0.0005 (−6.756)	−0.0005 (−8.753)
TEN	0.040 (11.63)	0.0443 (13.422)
TENSQ	−0.0007 (−6.690)	−0.0008 (−7.783)
NONTEN	0.035 (12.922)	0.036 (13.625)
NONTNSQ	−0.0005 (−6.512)	−0.0005 (−6.728)
EXTEN	−0.0012 (−6.747)	−0.0012 (−7.655)
NONTNTN	−0.001 (−3.685)	−0.0013 (−4.920)
MOVE	−0.403 (−1.597)	−0.405 (−1.594)
GVTFND	0.074 (6.306)	0.063 (5.35)
PATH	0.127 (2.45)	0.221 (3.746)
PATHEXP	0.004 (0.707)	−0.0034 (−0.564)
PATHXSQ	−0.0002 (−1.777)	0.00003 (0.157)
PATHTEN	−0.002 (−0.283)	−.021 (−2.301)
PATHTNSQ	0.0002 (0.635)	0.00006 (2.398)
PATHNTN	0.001 (0.154)	−0.003 (−0.469)
PATHNTNSQ	−0.0003 (−1.032)	−0.0002 (−0.734)
PATHXTEN	0.0001 (0.282)	0.0003 (0.769)
PATHNTEN	−0.0002 (−0.330)	0.0009 (1.606)
R-SQUARE	0.3477	0.3359

using SUPATH are both insignificant at the .01 level or better, suggesting that managerial earnings neither grow more rapidly nor maintain their growth longer as would be expected with a more slowly depreciating human capital accumulation. In addition, the coefficients for the variables measuring the interaction between path and prejob experience are also insignificant at the .01 level. This is a particularly interesting result because it suggests that managers do not possess more valuable general human capital than technical workers. Given that one element of human capital is natural talent, this result provides some support that the difference in earnings is structural rather than the result of differences in ability. The one anomoly is that the path-job tenure interaction variables are the wrong sign and significant when OCCPATH is used as a measure of managerial status.

Figure 1 shows earnings growth over the current job (TEN) for a sample worker who had two years experience before the current firm and five years before the current job in this same firm.[1] This base case worker had a B.S. degree and was a civil engineer working in the mining industry. While it is clear from this diagram, as well as from the results of the model, that managers earn more than technical workers,

FIGURE 1

Earnings Growth over Career



Assumes 2 years of pre-firm experience
and 5 years experience in the same firm.

these results suggest that this difference is more likely to depend on being on a particular path than because of a greater human capital accumulation.

Policy Implications

While optimal allocation of labor is desirable for all labor types, better management of scientific and engineering workers is especially important as economic growth and competitiveness comes to depend increasingly on technological innovation and improved production processes. While there may be a clear policy justification for paying more productive workers more, the results of this model suggest what has been discussed previously in the organizational literature regarding the careers of scientists and engineers, that the level of compensation for technically skilled labor is not an entirely economically determined outcome based on productivity differences but has much to do with the structure of the workplace. The combined forces of the rising need for technical labor and an aging labor force indicate that there is a definite need to reevaluate the career options that are open to technical workers and the compensation schemes that accompany those options.

Endnotes

[1] This figure is based on estimates using SUPATH as the measure of managerial status and only those variables with coefficients that were found to be significant at the .01 level or better.

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Loyalty—A Correlate of Exit, Voice, or Silence?

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In 1970, Hirschman (1970) introduced a model describing how individuals may respond to perceived declines in firms, organizations, and states. He suggested that individuals may either decide to remain within a deteriorating organization and attempt to change worsening conditions, or, alternatively, opt to sever relationships with the organization. The former course of action was labeled "voice," and the latter was called "exit."

Several scholars have adapted this model to the industrial relations setting in an attempt to explain how the presence (or absence) of unions may affect the use of either the exit or the voice option. For example, Freeman (1976, 1980a, 1980b) and Freeman and Medoff (1977, 1984) link the presence of unions, and their attendant grievance systems, with the associated decreased probability of employees to quit (or exit) the firm, vis-à-vis employees who are not represented by unions. Allen (1984) similarly applies Hirschman's model to the labor relations setting. He theorizes that union voice (i.e., the grievance process) gives employees a method to voice dissatisfaction. This should, in turn, be reflected, all else equal, in lower absence rates in unionized firms compared to their nonunion counterparts. However, Allen finds that absence rates are higher among union firms and suggests that this is because there are reduced penalties for absenteeism in unionized firms.[1]

These works notwithstanding, no attempt has been made to embody the entirety of the Hirschman model to the industrial relations setting. As expressed by Hirschman (1970, p. 77), "the likelihood of voice increases with the degree of loyalty." Clearly, then, loyalty becomes a treatment variable if one is attempting to model the probability of an individual to exercise voice, or, alternatively, to exit the firm. Yet this variable has been omitted, both conceptually and empirically, in previous studies on the use of the voice option.

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The failure to include the concept of loyalty in the industrial relations "exit-voice" research, however, goes beyond the search for a comprehensive application of the Hirschman thesis. There are developing pieces of evidence that appear to run contrary to the model itself. For example, Lewin (1987) has observed that individuals in nonunion firms who have exercised voice are more likely subsequently to exit the firm compared to those who have not made use of the complaint system. A parallel finding occurs in the union setting (Lewin and Peterson, 1987). Furthermore, it is becoming more probable to observe individuals first exit a company and then use voice. Certainly, in the court cases of "constructive discharges," we see that individuals do, in fact, exercise post-exit voice—first they quit their jobs and then seek relief from the courts for their employers' discriminatory or hostile work environments. Moreover, the research on whistle blowing suggests that those who do complain about company policies and practices are considered disloyal by other members of the firm (Elliston, et al., 1985 and Westin, et al., 1981). These findings and observations combine to suggest that perhaps loyalty moves independently of voice. Alternatively, these data suggest that while the *initial* use of voice may be more probable for the loyal employee, having once used voice, somehow the former degree of loyalty dissipates, making exit the more likely of the two options. A third conceivable explanation is that loyalty is more closely related to the decision not to use voice but, nevertheless, still remain with the organization—the "suffer in silence" option.

This paper extends the Hirschman model by examining, in a preliminary manner, how exit, voice, and loyalty interrelate for grievance/complaint system users. In so doing, it attempts to increase our understanding of how loyalty may moderate the use of voice.

The Conceptual Framework

In operationalizing Hirschman's model so that his concept of loyalty can be quantitatively examined, the following is instructive.

> (T)wo principle determinants of the readiness to resort to voice when exit is possible (are):
>
> 1. The extent to which customer-members are willing to trade off the certainty of exit against the uncertainties of an improvement in the deteriorating product; and
> 2. The estimate customer-members have of their ability to influence the organization (Hirschman, 1970, p. 77).

Hirschman asserts that the first factor is closely related to loyalty and will herein be referred to as LOYALTY. The second factor can be considered as a measure of how effective an individual feels a given grievance/complaint mechanism is. Linking these factors together, the following conceptual framework can be specified.

$$\begin{array}{c}\text{The Probability of}\\ \text{Exercising Voice}\end{array} = \text{Function} \left(\begin{array}{c}\text{Factor 1}\\ \uparrow \\ \text{remaining}\\ \text{with the}\\ \text{company}\\ \downarrow \\ \text{LOYALTY}\end{array} ; \begin{array}{c}\text{Factor 2}\\ \uparrow \\ \text{perceptions}\\ \text{of effective}\\ \text{voice}\\ \\ \\ \end{array} \right)$$

Two additional specifications to this model are necessary. First, Hirschman's framework applies strictly to those who have experienced or perceive themselves to have experienced a deterioration of their states within the organization. As a result, one must restrict the unit of analysis solely to those individuals of the firm who perceive themselves to have suffered some form of injustice (Boroff, forthcoming). While this seems straightforward, the existing studies on complaint system users fail to make this initial screen (Ash, 1970; Lewin, 1987; and Lewin and Peterson, 1987). In so doing, these studies potentially distort the collective characteristics of the nonuser population by including among the nonusers those who have not perceived a need to activate the voice option.

The second specification to the above model focusses on loyalty. While Hirschman asserts that remaining with a company is a measure of loyalty, we know from the literature on job mobility that other factors are related to the decision to quit a firm. Blau and Kahn (1981), for example, find that the quit rate for younger women is higher than that of their male counterparts and that job tenure is negatively associated with quitting. Further, wages are negatively related to the likelihood of quitting. Viscusi (1980) has found that married women are less likely to quit than single women. Mitchell (1983) reports a positive relationship between fringe benefits and low turnover, particularly when employees are offered an employer-provided pension plan and health insurance. Last, Weiss (1984) finds that better-educated workers have lower quit propensities. In light of this series of findings on job mobility, one needs to control for these characteristics in modeling the probability to use voice, according to the Hirschman theme. Once having done so, one is in a better position to assert that a significant result observed for Factor 1 is a measure of loyalty.

The more specific conceptual model follows.

The Probability to Use Voice for Those Perceiving a Deterioration in Their States = Function (LOYALTY ; EFFECTIVE VOICE)

$\uparrow$

controlling for job tenure, sex, education, wages, marital status, and fringe benefits

The Data Set and the Estimation Procedure

In order to test the model, the complaint system of a nonunion firm is studied. The firm under study has established a complaint system, herein called the Company Complaint Procedure (CCP), as part of its overall strategy to remain union-free. Both nonsupervisory and managerial employees can register workplace complaints by filing a CCP.

The data used in this article were drawn, with permission, from the results of a survey developed and administered to nonsupervisory and managerial employees at this company by Dr. Alan F. Westin, Professor of Law and Government, Department of Political Science, Columbia University, to be used in a book on fair procedure systems that Professor Westin is writing. In 1987, this questionnaire was distributed to approximately 1,350 nonsupervisory employees. The surveys (950) were randomly distributed to the nonsupervisory population, regardless of CCP use; the remaining 400 were randomly distributed to known nonsupervisory CCP users, taking care not to mail a survey if an individual was a member of the 950 sample.[2] A total of 579 surveys were completed by the nonsupervisory employees, representing a response rate of 42.9 percent. From the surveys, it was possible to determine who perceived themselves to have experienced unfair treatment. It was also possible to determine who filed a CCP. Further, all respondents, regardless of CCP use, were asked to rate the CCP.

The dependent variable in the model is the probability of exercising voice via the CCP in the face of perceived unfair treatment. As such, the correct functional form is one that constrains the probability function from zero to one (Aldrich and Nelson, 1984). Multinomial LOGIT is used to estimate this probability.

The empirical model is specified below.[3]

$$(1)\ P(VOICE) = B_0 + B_1LOYALTY + B_2CCPRATG + B_3SERVICE + B_4SEX + B_5EDUCATN + B_6OCCUP + e_1$$

where

P(VOICE) is the probability of using the CCP. It is a dummy variable coded 1 if the employee perceived to have experienced unfair treatment and filed a CCP and coded 2 if the employee perceived to have experienced unfair treatment but did not file a CCP. The relevant questions on the survey instrument are (1) "have you, in the past year, experienced unfair treatment," and (2) "have you filed a CCP?"

LOYALTY is a dummy variable coded 1 if the employee expects to remain with the company over the next three years and coded 0 if the employee anticipates leaving the company within the next three years. The relevant question on the survey instrument is "do you expect to be working at the company three years from now?"

CCPRATG is the rating given for the CCP. The relevant question on the survey is "overall, on a scale of 1 to 10, with 10 being 'excellent,' 5 being 'average,' and 1 being 'poor,' how would you rate the CCP?" This is the measure of perceptions of effective voice.

SERVICE is tenure with the company in years.

SEX is a dummy variable coded 1 if the employee is female and 0 if the employee is male.

EDUCATN is the years of schooling of the respondent.

OCCUP is a scaled variable ranging from 1 to 5, reflecting occupational levels in the company associated with increasing wages. This variable is a proxy for wages.

e_1 is the error term.

According to the Hirschman model, B_1 and B_2 are hypothesized to be positive.

The Empirical Results and Discussion

The MLOGIT results are shown in Table 1. While LOYALTY is significant, its sign is negative, contrary to the Hirschman model. This seems to suggest that in the face of unfair treatment, the use of voice may not necessarily be an alternative to exit. Rather, the use of voice may actually be a precursor to exit—that once an individual has decided to complain formally to his or her employer, the possibility of exiting from the organization is an option now considered. Further,

TABLE 1
MLOGIT Voice Function
(parameters are provided with t-statistics in parentheses)

Explanatory Variable	Parameter/(t-statistic)
LOYALTY	−1.34
	(−2.86)***
CCPRATG	− .05
	(− .83)
SERVICE	.12
	(2.67)***
SEX	.39
	(1.29)
EDUCATN	.01
	(.07)
OCCUP	.15
	(1.24)
CONSTANT	.56
	(.45)
N	223
Chi-Square Test	25.38***
Degrees of Freedom	7
Pseudo-R^2	.10

The Chi-Square Test and the Pseudo-R^2 are the MLOGIT equivalents to the F Test and the R^2, respectively, in multiple regression (Aldrich and Nelson, 1984).

Significant at the .01 level = ***.

this finding suggests that tolerating perceived unfair treatment, i.e., suffering in silence, may be a more realistic interpretation of how loyalty and voice interrelate—the more loyal employee is *less* likely to voice a complaint. The result observed here is certainly compatible with both the Lewin (1987) and the Lewin and Peterson (1987) findings that users of voice are more likely to exit a firm. It also comports with the whistle blower phenomenon, whereby employers regard employees who do voice disagreements about company actions as disloyal.

The only other significant variable is SERVICE. This result supports previous work that suggests that individuals who have longer tenure might be more likely to use voice rather than forfeit position, wages, and job benefits accumulated over the course of their careers. The remaining variables (and their signs), including the measure of effective voice (CCPRATG), are insignificant, and thus, statistically undifferentiated from zero.

This paper has presented an initial attempt to investigate the relationship between exit, voice, and loyalty. This investigation was warranted because both the empirical evidence as well as observations from the workplace seem to suggest that loyalty was, perhaps, not associated with the use of voice or exit, at least in the context of industrial relations. The findings here, albeit bounded by the fact that they represent the experience of only one company and rest on a single and imperfect measure of LOYALTY, do support the possibility that loyalty is associated with the reluctance to use voice. The implication for researchers is that voice and exit may not necessarily represent opposite points on a line of options for the aggrieved employee. Rather, these options may lie on the same side of that spectrum, with the option of doing nothing representing the opposite point. Further, practitioners may want to pay closer attention to individuals who register workplace complaints, since such actions may signal a pending separation from the company.

Acknowledgments

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Endnotes

[1] One can argue that perhaps Allen's measure of "exit," i.e., absenteeism, is not appropriate. Absenteeism, instead, may be a form of "voice." For example, police and firefighters have been known to have "sickouts" while simultaneously protesting management practices.

[2] Because of special measures taken to ensure the confidentiality of CCP users, it is not possible to identify from the surveys that were returned which ones were completed by the first group of 950 and which ones were completed by the sample of 400. It should also be noted that, in actuality, 600 surveys were randomly distributed to known CCP users but approximately one-third of these were sent to *managerial* employees. These latter surveys were deleted from the analysis here.

[3] As noted above, fringe benefits are correlated with turnover. However, because the sample of employees here all belong to the same firm, variation in the differences of fringe benefits is minimal. As a result, this control variable is deleted from the empirical model. Further, marital status is omitted in the empirical model because this information was not captured in the survey instrument.

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The Role of Military Educational Benefit Programs: Impacts on Minority Opportunities

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The military is the nation's largest employer of young men. It is also the largest vocational training institution. Since the end of the draft and the institution of the all-volunteer force in 1973, military service has become primarily a matter of individual choice. Consequently, the military has had to compete with civilian employers and educational institutions for the services of young people (Blair and Phillips, 1983). Key public sector human resource decisions continue to be needed on how to staff the armed forces without reliance on the draft. A related set of public policy questions involves the impact of the education and training obtained through the military on the subsequent civilian labor market careers of veterans. Overlapping these issues are other social issues about the appropriateness of the overrepresentation of minorities in the military and the implications for equal employment opportunity and racial inequality in the labor market.

Cutting across all of these issues are questions about the role of military educational benefits programs such as the GI Bill and the Veterans Educational Assistance Programs (VEAP). How important are military educational benefit programs to young white and minority men in the decision to enlist in the military? To what degree do servicemen, and especially minorities, participate in military educational benefits programs and thereby accumulate funds to finance their future educational objectives? To what degree do military educational benefits programs help white and minority men obtain levels of education that they might not otherwise obtain?

The issue of minority, especially black, composition of the armed forces is highly significant since more than 20 percent of armed forces personnel is black, with the highest percentage being in the Army—

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more than one-third (Binkin et al., 1982). Indeed, since the introduction of the all-volunteer force we find that while young blacks make up less than 14 percent of the youth population, they have made up between 22 percent and 36 percent of Army enlistments each year (OASD, 1987). When we restrict our attention to the military-eligible male population (those who qualify for military service on the basis of education and mental ability scores) by race and examine the proportion of enlistees, the enormous attraction to military service for black young men becomes apparent. The military participation rate for qualified blacks approaches 50 percent but is only about 16 percent for qualified whites (Binkin and Eitelberg, 1986). Why do one out of two qualified young black men enlist in the armed forces?

Although it has not always been the case (Hope, 1979), it appears that in recent years the military establishment has been characterized by greater equality of opportunity, at least in comparison to the civilian labor market (Moskos, 1986; Daymont and Andrisani, 1987).

Does the overrepresentation of minority males in the military tend to help or hurt minorities in terms of relative earnings and employment security over their careers? To the extent that military service has a positive payoff in terms of subsequent civilian labor market success, then this should help to reduce racial inequality in the labor market. To the extent that the military is a poor place to start a career, then this would tend to exacerbate racial inequality.

There are substantial differences of opinion as to whether military service has a positive, negative, or neutral effect on earnings. Results concerning this issue vary from study to study depending upon the methodology being used. Results also appear to vary by time period. Concerning the all-volunteer force era, existing research suggests that military service may have a positive impact on earnings. For example, Mangum and Ball (1987) found a surprisingly high degree of transferability to the civilian labor market of the skills learned in the military. In an analysis of longitudinal data, Daymont and Andrisani (1987) found that young men in the military service enjoy an earnings advantage relative to their civilian counterparts who do not go to college immediately after high school.

Daymont and Andrisani found that the economic returns to military service were greater for minorities than for whites. While the civilian earnings of young minority veterans were as high or higher than the earnings of comparable young minority men who never served, their advantage did not increase over time as it did for white veterans. Taken together, these results support the view that the military is a leader among employers with regard to equal employment opportunity efforts for men. However, these results also suggest that when minority veterans return to the civilian labor market, their earnings are adversely affected by the same types of barriers that adversely affect minority males who never served in the military.

Our study focuses on a specific set of programs that may be contributing to the apparent positive effects of military service for minority males, namely military educational benefits programs. When the draft was ended in 1973, the GI Bill was still in effect, but it was terminated in December 1976. It was replaced by the VEAP, a contributory system whereby a service member could contribute up to $2,700 and would receive from the government a two-for-one matching amount of $5,400 for a total entitlement of $8,100. Because of the Army's greater recruiting difficulty, the Army College Fund was instituted in 1982. This program was a supplement to the VEAP and provided an approximately six-to-one government match of the service member's contribution. Under the Army College Fund, qualified soldiers could accumulate as much as $20,000 with a $2,700 contribution.

In July 1985, the current GI Bill took effect: it reduced the service member's contribution to $1,200 and raised basic benefits to $10,800. The Army College Fund continued as the second part of the two-tiered system. While all enlistees are eligible for the GI Bill, only academically qualified Army enlistees who sign up for occupational specialities designated by the Army as critical-need jobs are eligible for the Army College Fund. For qualified 4-year Army enlistees, the basic service member contribution of $1,200 will be matched by GI Bill and Army College Fund benefits for a total entitlement of $25,000.

Additional benefits are available for enlistees taking courses while in the military, but these benefits vary by branch of service. For example, the Army will pay for 75 percent (90 percent for grade E-5 and above) of the tuition for any part-time courses taken while in the Army.

It appears that, since the introduction of the all-volunteer force, many young men entering the military are viewing military service as an investment in their human capital (Kim 1982). Our study will examine the degree to which minority and white males differ in the importance they attach to military educational benefits programs in their decision to enlist in the military. Also, we will examine the degree to which servicemen, especially minorities, participate in military educational benefits programs and thereby accumulate funds to finance their future educational objectives. Finally, we will study the degree to which military educational benefits programs help white and minority males obtain levels of education that they might not otherwise obtain.

Data

The data for our analysis are drawn from the "Youth Cohort" of the National Longitudinal Surveys of Labor Market Experience (NLS). This cohort comprises over 13,000 young men and women between the ages of 19 and 27 in 1984 who were interviewed annually since 1979. Four features of the NLS data make them especially advantageous for this study.

First, they are longitudinal in nature. This allows us to link, for example, attitudes about educational benefits programs, measured near the time of enlistment, with later behavior regarding the accumulation of educational benefits as well as subsequent educational attainment during and after military service.

Second, the NLS data contain a wealth of information about a wide range of educational, military, demographic, social, psychological, and economic characteristics.

Third, thanks to funding from the Department of Defense, the data contain a special military subsample as well as comprehensive and detailed information on the military experiences of all respondents.

Finally, our analysis of racial differences is enhanced by the fact that minorities were systematically oversampled in the youth cohort. This necessitates that weighted analyses be performed with each observation weighted in inverse proportion to its likelihood of being selected into the sample.

Our analysis was restricted to young men who entered the military between 1974 and 1980 and who had completed a tour of duty by age 23. Individuals were considered to have completed a tour of duty if they served at least 33 months. Officers were excluded from the analysis. This resulted in a sample of 735 young men.

Results

Educational Benefits in the Enlistment Decision

Table 1 shows the results for three indicators of the importance of educational benefits in the enlistment decision. These results reveal that 65 percent of the servicemen responded that educational benefits

TABLE 1

Importance of Educational Benefits in the Enlistment Decision (%)

Indicators of Importance of Educational Benefits	Total Sample	Race		Post Mil. Ed. Ben. Yes		Post Mil. Ed. Ben. No		AFQT Scores High		AFQT Scores Low	
		Wht.	Min.	Wht.	Min.	Wht.	Min.	Wht.	Min.	Wht.	Min.
Ed. ben. 'Were Important' at time of enlistment	65	60	78°°°	72	84	53	70°	59	83°	62	77°°
Ed. ben. were a reason for enlisting	59	57	66°	70	74	48	57	63	72	49	65°°
Ed. ben. were a 'Main' reason for enlisting	17	16	21	26	23	9	18	18	26	13	20

Note: Asterisks indicate the level of statistical significance of the racial difference in responses: ° p < .05 °° p < .01 °°° p < .001. Ed. Ben. = educational benefits, Post Mil. = post military, Wht. = white, and Min. = minority. AFQT = Armed Forces Qualifying Test.

were an important consideration when first enlisting. Moreover, 59 percent of the servicemen reported that the educational benefits were a reason for enlisting. These results suggest that educational benefits are, in fact, important to the enlistment decision. Indeed, one-in-six servicemen report that educational benefits are the main reason for enlisting in the military.

Educational benefits appear to be more important for minority than white males. Minorities were more likely than whites to report that educational benefits were important, were a reason for enlisting, and were the main reason for first enlisting in the military. These differences were statistically significant for two of the three variables.

In our analysis, we need to consider the fact that educational benefits programs include both programs such as tuition reimbursement that provide education while in the military and programs such as the GI Bill, VEAP, and the Army College Fund that provide financial resources to postservice education. In general, the racial difference found for the overall sample holds both for those who participated in postmilitary educational benefits programs and for those who did not (Table 1).

Of those not participating in postmilitary educational benefits programs, two-thirds had taken some formal course work while in the military, facilitated by military tuition reimbursement programs. Taken together, these results suggest that minorities view both in-military and postmilitary educational benefits programs as more important than do whites.

There is a tendency for high-quality (in terms of mental ability) servicemen to view educational benefits as more important than do low-quality servicemen. Here, mental ability categories are defined in terms of being above or below the mean on the Armed Forces Qualifying Test (AFQT). Again, the results suggest significant race differences with minorities being more likely to view educational benefits as important.

Satisfaction With Educational Benefits

Those who said that educational benefits were important were subsequently asked if their expectations had been met. Three-fourths of the servicemen said that their expectations had been met (Table 2). However, there are significant differences between whites and minorities. We see that 81 percent of whites versus 65 percent of minorities reported having expectations met regarding educational benefits. Differences were much greater among those with

TABLE 2

Educational Benefit Program Participation and Satisfaction

Indicator	Total	Race		Post Mil. Ed. Ben.				Ed. Ben. Main Reason for Enlisting	
				Yes		No			
		Wht.	Min.	Wht.	Min.	Wht.	Min.	Wht.	Min.
A: Fulfillment of Expectations and Satisfaction (%)									
Expectations about ed. ben. were met (a)	75	81	** 65	87	** 66	77	63	86	** 51
Satisfied with military	79	82	75	84	72	80	79	87	90
B: Participation in VEAP ($)									
Average monthly contribution (b)	57.63	58.88	55.59					58.70	60.38
Average accumulated benefits (c)	4,135	3,902	4,503					4,935	4,273

Notes: Asterisks indicate the level of statistical significance of the racial difference in responses: * $p < .05$ ** $p < .01$. (a) Sample includes only servicemen who said that educational benefits were important. (b) Sample includes only servicemen who made monthly contributions to VEAP. (c) Sample includes only servicemen who had accumulated VEAP benefits and who had left the military by 1984. Wht. = white, Min. = minority, Post Mil. = post military, and Ed. Ben. = educational benefits.

postmilitary educational benefits than among those without. Furthermore, when focusing upon those who said that educational benefits were the main reason for enlisting, the differences are even more dramatic (86 percent of whites versus 51 percent of minorities). In contrast to these results, we find that there are no significant race differences in overall satisfaction with the military experience. This suggests that the racial difference in the degree to which expectations are met is not due to a racial difference in general response style or a difference in overall satisfaction with the military.

Why are minorities more likely than whites to indicate that their expectations about military educational benefit programs were not met? One possibility is that minorities received lower benefits than whites. However, minorities receive benefits comparable to whites (Table 2, Panel b).

Another possibility is that expectations are formed not in terms of benefit levels, but in terms of educational goals and that minorities have expectations that are more difficult to meet due to their greater likelihood of being from economically disadvantaged backgrounds. Consider, for example, that a minority and a white both expect that educational benefits will provide the financial resources to obtain the same level of education, say a college degree. In this case, the minority is more likely to be disappointed. That is, the minority is more likely to find that the educational benefits are insufficient to finance his educational goal because of a greater gap between the resources available and the resources necessary to achieve his educational goal.

Additional analyses not reported suggest that minorities have less financial support from their families. For example, minorities have more siblings with whom they have to share resources (4.4 for minorities versus 3.3 for whites), parents with lower levels of education (11.6 years for whites versus 10.7 years for minorities), and a greater likelihood of being from a single parent household (11 percent for whites versus 27 percent for minorities). Consequently, the more generous benefits provided by the GI Bill (between $10,800 and $25,000 including Army College Fund benefits) can be viewed as particularly valuable in helping minorities achieve their educational goals.

Education During and After Military Service

Of the servicemen who entered the military with less than a high school education, 56 percent had completed a high school education prior to leaving the military (Table 3). Furthermore, as of the last

TABLE 3

Educational Attainment During and After Military Service

Education When First Enlisted	Total Sample (Weighted)	Completed Some High School/College Courses While in Military (%)			Completed High School by (%)		Years of College Completed During and After Military By Last Interview[a]		
		Total	Wht.	Min.	End of Enlistment	Last Interview	Total	Wht.	Min.
Less than high school	209 (28%)	80	79	83	56	82	0.6	0.6	0.6
High school	499 (68%)	55	55	55	—	—	1.4	1.6	** 1.0
More than high school	27 (4%)	81	81	80	—	—	0.4	0.4	0.5
Total	735	63	63	63	88	95	1.2	1.3	0.9

Notes: Asterisks indicate level of statistical significance of the racial difference * $p < .05$, ** $p < .01$. (a) Mean years completed based on college attendees only. Wht. = white and Min. = minority.

interview in 1984, 82 percent had completed a high school education. This appears to be a much higher completion rate than exhibited by high school dropouts who enter the civilian labor market (see, for example, Daymont and Andrisani, 1987).

Well over half of the servicemen took either high school or post high school courses while in the military. Many had earned significant amounts of college credit by the final interview in 1984. While the overall levels may seem low, we believe that the mean levels of additional education are rather impressive given that the data only allow us to follow these servicemen for a few years after separation from the military. Of those who earned college credits either during or after the military, the average time between leaving the military and the last interview was 2.3 years. These results indicate that not only are many servicemen attracted to the military because of educational benefits, but that they are also furthering their education both while in the service and shortly after separation.

Conclusions

Our analysis exploited the unique advantages of the NLS data to examine the importance of military educational benefits for young minority and white men. Survey results showed that the availability of military educational benefits such as the GI Bill, the Veterans Educational Assistance Program, and the Army College Fund were very important factors in the enlistment decisions of both white and minority servicemen. These results are consistent with the notion that, especially since the introduction of the all-volunteer force, young men view military service as an investment in their human capital.

More specifically, many young men are convinced of the importance of acquiring additional education and view military educational benefit programs as potentially valuable sources of funds to finance their educational objectives. Our results also suggest that, from the point of view of the Department of Defense, military educational benefits appear to be an effective incentive for attracting young men with above average mental ability.

Interestingly, military educational benefits were more important in the enlistment decision for minorities than for whites.

However, among servicemen who said that educational benefits were important, minorities were less likely than whites to say that their expectations about military educational benefits were met. We speculated that this may be due to the fact that minorities are more likely to come from economically disadvantaged backgrounds and reflect a greater gap for minorities than whites between the financial resources that are available and the financial resources that are necessary to achieve their educational goals. Finally, it should be noted that the majority of the servicemen in our sample entered the military at a time in history when the postmilitary educational benefit program (i.e., VEAP) required relatively large contributions and provided for relatively small levels of benefits. The present program, the new GI Bill, is considerably more generous. Hence, we anticipate that recent enlistees, both white and minorities, may be more satisfied with their educational benefits than were the members of our sample. And hopefully, the benefits acquired by servicemen through the new GI Bill will better enable them to achieve their educational objectives.

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DISCUSSION

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I will confine my comments to the Roberts and Boroff papers.

The Roberts paper is an interesting paper on the wage profiles of scientists as a function of experience and whether they are on a scientific/technical job without management responsibility or a job with management responsibility, and perhaps, some continuing technical responsibilities. I have two major comments on this paper. First, in future research, I hope the author will take advantage of the panel structure of these data and investigate different interpretations of the experience effect. Abraham and Farber (1987) (also see Altonji and Shakotko, 1987) show the positive coefficient on tenure in a cross-sectional data set could be either because tenure has a causal effect on earnings or because tenure is a proxy for match or job quality. If "high ability" people get the better jobs and remain on these jobs longer because they are the "good jobs," this will create a positive correlation between experience and wages in a simple cross-section. Using panel data, Abraham and Farber distinguish between these two effects and conclude there are only very modest returns to seniority. Investigating this issue with these data would be very interesting because of the two career tracks. The greater returns to experience in the managerial track could be because the managerial jobs are the "good jobs" that go to the "better" scientists.

My second comment is about the construction of the career-track dummy variable. The 13-23 percent average wage premium received by scientists on the managerial track is based on a comparison between scientists in either technical or managerial jobs in 1972. Individuals in the managerial track included two potentially very different types of workers; those that held managerial positions in their last three jobs and those that changed from a technical to managerial position in one of their last three jobs. Those individuals that did not move from the technical to managerial career track in their last three

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job moves are likely to be much older than those that did change career tracks within the last three jobs and may have a very different earnings profile than the managers that made the career switch more recently. I would have liked to have seen this issue addressed by separately estimating the effects for these two types of managers.

The Boroff paper uses an interesting data set on a complaint procedure from a nonunion firm to investigate who files a complaint. I would have liked a little more detail about the characteristics of the complaint procedure and additional descriptive statistics on its use. For example, it would be interesting to know what percentage of employees in this firm perceived that they had been treated unfairly by the organization. Of the useable responses, 39 percent reported they had been unfairly treated. However, because the survey sample was "choice-based" and oversampled employees who had actually used the complaint procedure, this percentage undoubtedly overestimates the percent of all employees who believed that they were unfairly treated. This latter percentage could, however, be calculated using the sampling proportions and response rates for users and nonusers of the complaint procedure.

My major substantive concern with the paper is the empirical specification and the construct validity of one of the measures. Boroff wishes to test whether loyal employees are more likely to use the complaint procedure than less loyal employees, conditional on having experienced unfair treatment by the firm. Loyalty is operationalized using a dummy variable indicating whether or not the employee expects to remain with the firm over the next three years. This variable measures intention to leave or turnover and does not measure the "loyalty" construct.

Finally, I would suggest a two-equation specification estimated on the entire sample, including those that did not report unfair treatment. The dependent variable in one of the equations would be the "intention to leave" measure and the second variable would be whether or not the complaint procedure was used. The major independent variable in each of the equations would be whether or not the worker experienced unfair treatment. This model would permit an evaluation of the relative effect of unfair treatment on either intent to exit or voice.

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XIV. THE GROWTH OF FREE TRADE AGREEMENTS AND THEIR IMPACTS ON LABOR

Regional Trading Blocs and Human Resources: The New Wild Card

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Multilateralism and Regionalism

After World War II, many American government, business, and labor leaders placed their faith in a multilateral trading system. Multilateralism describes an open trading system which includes many nations. Recently, a growing number of public and private sector leaders have been flirting with the notion of regional trading blocs. Regionalism generally is used in reference to the construction of some sort of free trade area (FTA), customs union, or sectorial agreement.

In response to the growth of regional trading blocs and globalization, many senior business executives have discovered that human resource policies are strategic levers that can improve the competitive advantage of their companies. In fact, in many cases human resource policy changes have proven to be the key short-run strategic lever. These policies include areas such as compensation and benefit levels, employment totals, training and development, and the use of contingent workers.

In the short run, a corporation often will be locked into a certain type of technology or capital stock. Also, the corporation will face many fixed costs that cannot be altered in the short run. However, as

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economists have pointed out for many years, labor is a variable cost. Thus, in the short run the management of a multinational corporation often has a far greater ability to adjust variable labor costs than other types of expenses.[2]

Global and Regional Thinking

Given the above realities, American executives at a growing number of multinational corporations are starting to plan and manage human resources from a regional, and/or global, perspective. In terms of multinational staffing, a local division often has the choice of using some combination of American expatriates, local nationals, and third country nationals. A product may be designed by a subsidiary in one country and produced by a second subsidiary in a different country. A division in one country may, in effect, work as a subcontractor for a second division in a different company.

Thus, the planning of a corporation's regional, and/or global, human resource options has reached a point where some experts suggest that the term *multinational corporation* not be used. Instead, these experts suggest that the term *transnational corporation* be employed. The difference in terms is as follows: a multinational corporation is a group of different national companies that are united in some general corporate empire; a transnational corporation is more of a unified economic unit that thinks on regional, and/or global, terms.[3] A multinational corporation would be similar to a track and field team in which players on the same side generally compete in different individual events. A transnational corporation would resemble a football team in which players on the same side have to coordinate their actions for the same exact play. A key feature of a so-called transnational corporation is its blend of centralization and decentralization. The so-called hallmark of the transnational corporation is flexibility.

Many times flexibility is presented as an unmixed blessing. But if it is not humanely instituted, flexibility is far from being a net benefit for a society. In fact, one's views of flexibility may well depend upon whether one is the "flexee" or the "flexor."

As leaders of major corporations have begun to think of human resource management more on regional, or global, terms, labor leaders have reacted. The creation of regional trading blocs—which results in the freer movement of goods, services, and capital within these blocs—presents corporate management with many new options on the human resource front. Consider the European Community (EC) and its plans to form a unified internal market by 1992. A European firm will be able to shift more of its work to those European markets that have lower labor costs. A firm will be able to expand plants in European nations that have weak labor, occupational safety, and health laws while closing plants in European nations that have strong regulations concerning worker displacement.

Management's New Possibilities

The expanded transnational possibilities that are now open to management are the new wild cards in the field of labor-management relations. People interested in human resource issues often have considered the potential unemployment, and/or employment, aspects of regional trading blocs. Often the econometric models show only small unemployment, and/or employment changes resulting from the formation of a new regional trading bloc.

However, the major human resource-related changes resulting from the creation of regional trading blocs may have more to do with the climate of labor-management relations than with net employment totals. For example, the formation of a regional trading bloc may not result in massive unemployment, but it could change management's outlook toward unionization. It may increase management's efforts to resist unions and establish nonunion corporate divisions. It may increase management's desire to keep a plant, an office, or store open for business despite a strike by union workers. It also may create some downward pressures on compensation and benefit levels. This does not mean that a corporation will always reduce the wages and benefits of current workers. But a corporation—presented with the new human resource possibilities which result from the establishment of a regional trading bloc—may increase its use of contingent workers (i.e., part-time, temporary, and subcontracted labor) and/or institute so-called two-tier wage and benefit systems.

Some experts have pointed out that management does not need a new regional trading bloc to create new policies such as two-tier systems or nonunion divisions. While this may be the case, the introduction of a regional trading bloc may increase the pace of such changes.

It has been argued that the above noted changes in labor markets and corporate human resource systems provide many benefits for a mature industrial economy. The increased labor market flexibility that recently has been established in many mature industrial economies may help restore international competitiveness within these economies. If this increased competitiveness can result in improved productivity levels, then workers in these mature industrial economies will in the long run wind up with higher compensation levels due to the creation of regional trading blocs. While some blue-collar jobs may be eliminated, the number of white-collar and so-called knowledge-based jobs may increase. Thus, it is argued, regional trading blocs could expand job opportunities in the long run.[4]

Labor's Response

Labor has responded to these trade-induced changes in the climate of labor-management relations. In essence, labor often has started to say the following: "Okay, you tell us that we live in a global economy. If that is the case, then we must have global labor standards!" If a regional trading bloc is created which promotes freer exchange within product markets, then the social policy area must not be forgotten, labor has insisted. In the case of EC 1992, it is ironic to think of the British Labour party as being the "party for Europe," while the British Conservative party is the "little Englander party." British Prime Minister Margaret Thatcher is now the one calling for "slow going" on EC 1992, while European Commission officials ask the British Labour party members to "go fast" on EC 1992.[5]

Prime Minister Thatcher's concern is that many of her labor-management victories in the United Kingdom might be reversed by the policies of a new, united Europe. Policy changes that British labor has not been able to win on the picket line or in the British Parliament, British labor hopes to win via the creation of unified labor and social policy standards for the entire European Community.[6]

American labor's response to regional and global trade has been to become more involved in United States trade legislation. Unfair labor practices have been tied with American trade laws which look at why various foreign producers may have a comparative advantage over the United States in certain product areas. Also, there has been a renewed effort on the part of American labor to have the United States approve various labor-related codes drafted by the International Labour Organization.

American labor leaders have been concerned about the prospects of a new FTA with Mexico. Such an agreement could have a major impact on American labor markets.

More Regional Trading Blocs?

Will more nations try to live within the General Agreement on Tariffs and Trade (GATT) system and at the same time create new regional trading blocs? Survey research conducted by the National Planning Association (NPA) indicates that the American executives who are active in international trade believe that there will be a growth of regional trading blocs in the future. These expectations are based on a 1989 survey of American executives who are members of NPA's various committees.[7] These executives are involved with many of the strategic decisions that influence their organizations' position in the international economy. Thus, the expectations of these United States executives (most of whom are top managers of Fortune 500 corporations) are based on a good deal of pragmatic day-to-day dealings with the current GATT system.

As indicated in Table 1, the vast majority of these executives believe that the international trading system is fragmenting, and 88 percent believe that the world economy is shifting in the direction of

TABLE 1

The Expectations of U.S. Executives in the Area of International Trade

Statements	Percent of U.S. Executives Who Agree
1. The world economy is shifting more in the direction of regional trading blocs (e.g., the United States and Canada, the European Community, Japan and Asia, and so forth).	88%
2. A shift to an increased role for regional trading blocs would hurt the United States.	77
3. A shift to an increased role for regional trading blocs would hurt the world economy.	63
4. A shift to an increased role for regional trading blocs would hurt my organization on balance.	42
5. A shift to an increased role for regional trading blocs would hurt the current round of GATT talks on balance.	75
6. A shift to an increased role for regional trading blocs would hurt American workers on balance.	64
7. I believe that most of the NICs would rather form a regional trading bloc with the United States than they would with Japan.	69
8. The United States should sign free trade agreements with:	
a. Mexico,	63
b. Japan,	41
c. One or all of the NICs,	40
d. The European Community,	53
e. Other countries and/or regions.	18
9. My organization has altered its business strategy in a specific way because of our expectations of growing regional trading blocs.	37

Source: Estimates based on 1989 NPA survey data.

more regional trading blocs. It is interesting to note that a majority of these American executives believe that the creation of more regional trading blocs will hurt the United States, the world economy, and American workers, on balance. However, only a minority of these American executives believe that the shift towards regional trading blocs will hurt their specific organizations, on balance. Thus, the majority of these American executives believe that somehow their organizations can obviate most of the costs generated by the growth of regional trading blocs.

Table 1 also shows that many of these American executives believe that the United States should sign new FTAs with many different countries. In the case of Mexico, 63 percent of the executives believe that there should be a United States-Mexican FTA. After Mexico, the most popular candidate for a new United States FTA is the EC. Based on NPA survey data three conclusions can be reached:

1. Many American executives expect to see the role of regional trading blocs increase in the global economy;
2. The growth of regional trading blocs could weaken the current GATT system, many American executives believe;
3. The growth of regional trading blocs could hurt the relative position of American labor.[8]

Labor Market Consequences

It is understandable that the product market impacts of regional trading blocs have been examined more thoroughly than have the labor market impacts of these types of international agreements. But recent trends in international trade will have a major influence on labor-management relations. It does not seem to be possible to go back to an era of mostly national product and capital markets. However, the growth of regional trading blocs has already produced serious jolts to traditional human resource systems.

Endnotes

[1] Richard S. Belous is Vice-President, International Affairs and a Senior Economist with the National Planning Association.

[2] Richard S. Belous. *The Contingent Economy: The Growth of the Temporary, Part-time and Subcontracted Workforce* Washington: National Planning Association, 1989, pp. 2-6.

[3] *Financial Times*. July 6, 1989, p. 14.

[4] Belous, Richard S., and Andrew W. Wyckoff. "Trade Has Job Winners Too." *Across The Board* (September 1987), pp. 58-61.

[5] *The Economist*. July 8, 1989, pp. 42-48. Also see: Michael Calingaert, *The 1992 Challenge From Europe: Development of the European Community's Internal Market*, Washington: National Planning Association, 1988.

[6] Hugo Young. *One of Us: A Biography of Margaret Thatcher*. London: Macmillan, 1989, pp. 143, 190-91, 381-88.

[7] The National Planning Association has five policy and research committees including the British-North American Committee, the Committee on Changing International Realities, the Canadian-American Committee, The Food and Agriculture Committee, and the Committee on New American Realities. The 480 members of these committees include top business, labor, and professional leaders.

[8] For more details see: *The Growth of Regional Trading Blocs in the Global Economy*, Richard S. Belous and Rebecca Hartley, editors. Washington: National Planning Association, 1990.

Potential Free Trade Agreement with Mexico and the Impacts on Labor

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What Will Be Examined

The examination in this paper proceeds from the assumption that Mexico and the United States will enter into a free trade agreement (FTA) covering substantially all merchandise trade and most services originating in the other country. The analysis also assumes that most foreign direct investment by one country in the other is free of restrictions or prior scrutiny. By contrast, free movement of labor is not assumed. This has been referred to as a "primitive" form of economic integration (Molle and van Mourik, 1988, p. 317). This last limiting assumption will be discussed later in the paper.

The analysis is not based on a value judgment that the two countries should conclude an FTA. The case for, or against, such an agreement has been made elsewhere and is now the subject of much debate in both countries (Weintraub, 1984, and Dornbusch, 1989). The question that is examined is much narrower: How would labor fare, particularly Mexican labor, if there were an FTA? The discussion will cover what theory can tell us in answering this question, but theory rooted in features unique to Mexico and the bilateral relationship.

What to Expect from Theory

One would expect the answer to the question posed to be reasonably straightforward: free trade should lead to a narrowing of wage and total compensation levels between the two countries, primarily by raising wages in Mexico. A narrowing of wage differentials among regions—although with some significant caveats which will be noted later—is what happens under free trade within nations. But there is a major difference within a single country: factor movements are also free. And the tendency toward wage equalization may come

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as much from labor migration as from product flows (Perlman, 1969, p. 140).

Mundell (1957, p. 329) argued some years ago that the economic expectation is that an increase in trade barriers will stimulate factor movements, and restrictions of factor movements will stimulate trade. This is an economist's way of saying what many Mexican policy makers have asserted—that the United States can take either Mexico's goods or its people.[1] However, Markusen (1983, p. 330) later noted that trade and labor movements could be complements, particularly where technology requires trained professionals. The question posed in this paper, however, is whether increased trade, even if not accompanied by increased movement of labor, would lower wage differentials between the two countries. If free trade is a substantial substitute for free factor movement, as economists have long argued, the expected answer is "yes."

Belassa (1961, p. 83) made the point that trade within a customs union (and by extension, in a free trade area) will reduce differences in factor prices—but he cautioned that this conclusion holds only if conditions of production are not markedly different in the participating countries. This caution really begs the question. Production conditions do differ generally between Mexico and the United States. The establishment of *maquiladora* plants in Mexico by the United States and other foreign companies is the best example of this difference. These plants use relatively cheap labor to add value to products shipped to Mexico for later re-export to the United States. This is close to pure Heckscher-Ohlin, that the abundant factor is exploited in each country, and in the process the demand for Mexican labor is increased. The only way for this production pattern to continue in its present form is for Mexican labor to remain perpetually cheap—and this is unlikely. Over time, therefore, even if production conditions are different when free trade is introduced, they almost certainly will converge with the advent of greater trade.

Theory, as it relates to the United States-Mexico wage relationship, must ask another question: whether the labor market segmentation that is such a prominent feature of modern Mexican society would swamp other wage equalization tendencies. The *maquiladora* are one example of this; they combine low-skilled assembly-line labor with sophisticated management personnel. Within Mexico itself, there is much putting-out production by large manufacturing plants to what are essentially small workshops. This is a common pattern in shoe and clothing production in the Guadalajara area. Piore (1984, pp. 84-87) has argued that past United States permissiveness in allowing entry of undocumented workers from Mexico was designed to increase the United States labor force without raising wage rates at the bottom of the scale. Martin and Richards (1980) have made a similar argument, that guest worker programs that encourage labor market dualism may negate the wage- and welfare-equalizing effects of increased trade and migration.

This argument is that extreme labor market segmentation of the type that exists in Mexico and is encouraged by immigration of low-skilled workers into the United States can nullify the wage-equalizing effects of trade and migration. Indeed, the position is often put even more strongly—that labor market dualism is promoted precisely to avoid wage-equalizing outcomes. It is hard to believe, however, that this pattern of labor recruitment could endure indefinitely under a full-fledged FTA. The agreement would last only if benefits were shared between the two countries; and this requires that Mexico substantially increase its exports. This, in turn, would require increased productive capacity and growth in labor demand, which should have a wage-raising effect in Mexico.

The other side of the labor coin relates to the impact of United States-Mexican free trade on the United States labor market. We have already witnessed some effects, such as the establishment of some 1,500 *maquiladora* plants generating about $2.5 billion of value added in Mexico, premised on differences in national factor endowments. Roughly 50 percent of the value of United States imports from the *maquiladora* comes from United States inputs and the other half from value added in Mexico, mostly labor (Schoepfle and Perez-Lopez, 1989). Does this deprive United States workers of jobs or create jobs by permitting the use of United States inputs for goods that might otherwise be produced wholly in foreign countries?[2] The answer to the question is not self-evident. Low-skilled, low-wage United States labor may well lose out; but then, it may lose out in any event unless there is United States trade protection. United States labor as a whole presumably gains from the greater competitiveness that results from production sharing using the least-cost mix of production sources.

The purpose of free trade, whether within a free trade area or generally, is to expand trade by fostering cross-country specialization. The customs union literature distinguishes between trade-creation, which augments welfare, and trade-diversion (from a lower-cost third party to the customs union or free trade partner), which reduces welfare (Viner, 1950). It would be an empirical question whether trade-creation or trade-diversion dominated in the short-term from a United States-Mexico FTA. The literature and the experience under the European Communities (EC) makes clear that the trade-creation/trade-diversion analysis is most relevant over time when the dynamic effects swamp the static. This, then, is the empirical question: Would free trade between the two countries increase their economic growth beyond what it otherwise would be? If so, would the binational specialization have a tendency to exploit Mexico's abundant factor (labor) sufficiently to raise its price?

The answer would come only in practice. However, if the FTA were to survive—if both parties benefited—then the expectation is that the FTA would raise Mexican wages more than those in the United States as a consequence of relative factor exploitation.

The Mexican-United States Labor Situation

Some background is necessary for readers not familiar with recent Mexico economic policy. Following a collapse in its economy in late 1981-1982, precipitated by inability to service its external debt but with much deeper roots, Mexico has been engaged in a dramatic shift in development policy. The main features of the new policy have been to open the economy to imports (to generally discard an import licensing system in favor of modest tariffs), emphasize the growth of manufactured exports as a major engine of growth (made necessary by the collapse of oil prices in 1981), and altering relative prices (particularly the exchange rate) to make this policy package viable. An anti-inflation program was later instituted.

Manufactured exports have in fact increased dramatically and now (1988 and 1989) far exceed petroleum as a foreign exchange earner. Manufactures constituted 15 percent of total Mexican merchandise exports in 1980 and rose to 48 percent of the total in 1988 (Banamex, August 1989, p. 327).[3] More than 80 percent of the manufactured exports go to the United States. This policy shift—lower import tariffs and a stress on manufactured exports—is what makes possible the discussion of free trade with the United States.

Much of the trade with the United States is in intermediate goods shipped within the same or related companies. Unger (1989) estimates that as much as half of Mexico's manufactured exports to the United States are of this nature. This is similar to the pattern of United States-Canada trade in manufactures. Intrafirm or related-party trade of this nature signifies specialization in different entities of the same multinational corporation. It is precisely this type of specialization that has occurred in the EC and is anticipated under the United States-Canada FTA. Under a United States-Mexico FTA, therefore, one would expect substantial product mandating by large companies, focusing as much on parts of products as on finished goods. Based on the current distribution of factor endowments between them, one would further expect the relatively labor-intensive production to be allocated to Mexico and the research—or technology-intensive production to be more concentrated in the United States. This allocation would not be absolute, nor would it be fixed, but over the short- to medium-term it is apt to increase demand for Mexican labor.

Another underlying reason for expecting Mexican wages to rise in a free trade area with the United States is that more labor is used in Mexican firms producing for export than in those producing for the domestic market. De la Fuente Deschamps (1989), in a detailed econometric study of 49 industrial branches over the period 1984-1987 (the period of expansion of manufactured exports) found that exporting industries increased their capital, generated more employment, and paid higher salaries than the nonexporting industries. This study also found that Mexican exports were sensitive to income growth in the United States. These are the expected outcomes; the value of de la Fuente Deschamps' study is that it confirms this for the period studied.

There is considerable literature on whether economic integration, within and between countries, is more likely to lead to economic convergence or polarization. The evidence is that industrialization tends to make developed societies more alike, or more alike than these countries are to developing societies (Dunlop et al., 1975, p. 37). However, the United States and Mexico start out quite unlike each other in level of development. Hourly compensation costs for production workers in manufacturing are quite disparate, as Tables 1 and 2 show.[4] Convergence to equality in compensation in the two countries is thus far distant. The question is thus more about direction—toward convergence or toward greater polarity under an FTA.

The answer will depend on economic growth in Mexico, and on comparative economic growth in the two countries. The decline in the ratio of Mexican to United States wages in manufacturing industries (evident in Table 2) is a reflection of the economic decline and rising unemployment in Mexico during the years shown. The expectation of wage convergence in an FTA must thus be based on the point made earlier, that free trade leads to some incremental increase in Mexico's economy over what would take place without free trade. If this were not the outcome, the FTA would not endure.

TABLE 1

Hourly Compensation Costs for Production Workers in Manufacturing Industries in the United States and Mexico, 1985-1987
(In dollars)

	1985	1986	1987
United States	12.96	13.21	13.46
Mexico	2.09	1.50	1.57

Source: U.S. Department of Labor, Bureau of Labor Statistics, Office of Productivity and Technology, unpublished data, 1988 and 1989.

TABLE 2

Indexes of Hourly Compensation Costs for Production Workers in Manufacturing Industries in the United States and Mexico, 1985-1987

US=100	1985	1986	1987
United States	100	100	100
Mexico	16	11	12

Source: U.S. Department of Labor, Bureau of Labor Statistics, "International Comparisons of Hourly Compensation Costs for Production Workers in Manufacturing, 1975-88," report 771, August 1989, p. 6.

Within Mexico itself, as in most countries, there has been a combination of economic convergence and polarity. Setting average national per capita gross domestic product (GDP) in 1980 at 100, those Mexican states well above the average include: Tabasco (from oil) at 250; the Federal District (where much of Mexican industry is concentrated), 191; Nuevo Leon (which contains the industrial city of Monterrey), 157; and Baja California (benefiting from proximity to the United States and the growth of the *maquiladora* industry), 127. By contrast, states well below the average include: Oaxaca, 40; Zacatecas, 47; and San Luis Potosí (INEGI, 1985, p. 11).[5]

The economic disparities within Mexico, while substantial, are not generally as large as between Mexico and the United States. It is here where the labor immobility assumption made at the outset of this paper comes into play. The large regional income differences within Mexico now affect fewer people than before because of internal migration. Rural areas of Mexico have consistently lost population to urban areas, precisely to those locations with wages above the average for the nation. Wage disparities between Mexico and the United States would also presumably narrow more rapidly if there were free migration from Mexico to the United States.

It is precisely these wage disparities, plus the excess labor supply in Mexico, that makes free labor movement between the two countries unlikely. Yet there is much labor movement, stimulated by the combination of excess labor demand in the United States (in such activities as hand-harvested agricultural crops, low-skill services, low-wage manufacturing, to cite a few) and excess labor supply in Mexico. Free labor movement is apt to come only as United States and Mexican wages are more or less equal, a development still quite distant.

Data deficiencies make it hard to calculate how long it would take for Mexico to work down its excess labor supply. Estimates of open unemployment in Mexico range from 5 to 13 percent, or from 1.2 to 3.2 million people. There is no satisfactory way to calculate the degree of underemployment. Additions to the labor force over the next 15 years are expected to be about one million people a year. What would it take to employ the currently unemployed and the new entrants in Mexico? Employment elasticities (the ratio of change in employment to change in GDP) vary among sectors: 0.09 in agriculture; 0.78 in industry; and 1.15 in services (this high figure may entail underemployment as this sector serves as a residual source of employment). The overall employment/GDP elasticity has been estimated at 0.64 (Hobbs, 1989). One calculation by Hobbs (looking just at unemployment and labor force entries, and not at underemployment) is that with steady 5 percent a year growth in GDP, Mexico could eliminate its excess labor supply by the year 2000. I made a comparable calculation that at steady 6 percent a year growth starting in 1985, Mexico could eliminate its excess labor supply by the year 2010 (Weintraub, 1989, p. 184).

Calculations such as these are projections based on uncertain data and narrowly defined assumptions. They are not predictions. What they show, however, is that there are circumstances under which Mexico's excess labor supply could be eliminated. The main requirement is a sustained high level of GDP growth. And this, in turn, is the key to the expectation of wage convergence in a Mexico-United States free trade area, that it will help Mexico achieve sustained economic growth.

Conclusions

The main assumptions on which the analysis in this essay was based are that Mexico and the United States enter into a FTA covering substantially all goods and most services originating in the other country, but not including free labor movement. What is actually taking place is more traditional negotiation to increase mutual entry for particular goods and perhaps freer entry encompassing whole manufacturing sectors, and to ease nontariff barriers in industrial standards, intellectual property, and other cross-sectoral areas. The two countries are moving toward freer trade with each other, but within a narrow range of goods and services. This implies that free trade, if it comes, will be delayed.

If it does come, it is rational to assume that it will endure only if each country concludes that it is benefiting, and that growth in GDP is greater under free trade than without it. Under these circumstances, demand for labor will increase, particularly in Mexico, whose manufacturing structure will likely be more labor intensive for some time than that in the United States. If Mexico can sustain high economic growth for 10 to 15 years, this may even permit absorbing excess Mexican labor. One would expect that with this combination of sustained, high GDP growth in Mexico and free trade under which goods and services could move freely into the United States, Mexican wages would increase more than those in the United States—and that a slow process of wage convergence would be set in motion.

Endnotes

[1] The joint communique of February 1979 issued after the state visit to Mexico by United States President Jimmy Carter contained the phrase that "Mexico does not wish to export workers but goods" and that a solution to the migrant issue is impeded by "restrictive measures in other areas," for which read trade.

[2] The most important United States imports from the *maquiladora*, under what used to be called item 807 of the U.S. tariff code, are electrical machinery, transportation equipment, and apparel. In 1987, these three product groups accounted for 80 percent of U.S. imports from Mexico under item 807.

[3] According to Banamex, August 1989, profit growth in 16 leading export industries was a cumulative 13.6 percent between 1983 and 1988, compared with 9.8 percent over the same period for 16 industries oriented toward the domestic market.

[4] The data focus on manufacturing industries for a number of reasons. Production workers in these industries are among the highest paid in Mexico, save for such sectors as petroleum extraction. A free trade agreement would have its greatest salience in the manufacturing sector and these wages, therefore, are the most germane to the discussion at hand.

[5] The minimum wage structure in Mexico differentiates among localities.

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XV. CONTRIBUTED PAPERS: HUMAN RESOURCES

Auto Workers Assess "Employe Involvement"

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Programs or corporate strategies designed to increase employee participation in shop floor activities have captured the attention of the industrial relations community during the past ten years. From the management perspective much of this interest stemmed from anxiety over international competitiveness, particularly relative to foreign firms that have been successful in developing participative management styles. Unions are also concerned about competitive status. This concern, coupled with an earlier interest in humanizing work, stimulated cooperation with participatory innovations.

Participative programs have been studied on a variety of measures, including their effect on firm performance (G. Klein, 1985; Gershenfeld, 1987; Katz, 1985), organizational effectiveness (Katz, Kochan, and Weber, 1985), and the jobs of first-line supervisors (J. Klein, 1984), among others. With only one notable exception (Kochan, Katz, and Mower, 1983) these studies ignored the voice of the rank-and-file worker participant. While managers are often surveyed on their opinions of participatory programs (Freund and Epstein, 1984; G. Klein, 1985), workers are generally represented by surveys of union leadership (Ephlin, 1983).

However representative union leaders may be of the median member, surveys of union leaders may overlook the diversity of experiences and interests which affect workers' reactions to job

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innovations. This is true even though many propositions can be examined only by listening to the workers. At the most elementary level, as long as participation is voluntary, the continuation of these programs will be affected by workers' assessments. Therefore, discovering workers' opinions of programs designed to increase their voice in productive activities seems essential (Kochan, Katz, and McKersie, 1985). Studies of workers' opinions will inevitably reveal that the rank-and-file is not a homogeneous group,[2] therefore, job type may be an important variable in the examination of job innovations.

Auto Workers' Evaluation of Employe Involvement

The many classifications of blue-collar work in the auto industry can be categorized into three job types: assembly, manufacturing, and skilled trades/maintenance.[3] These job types are not only highly correlated with skill, they also represent specific types of working conditions, organization of production, levels of autonomy, and worker-supervisor relationships.

A single job innovation such as Employe Involvement may have a varying effect on the quality of working life of workers in such different work situations. It then follows that workers who have experienced different effects of a program will assess it differently. Job type may also be an important variable when a program is instituted along with other changes in the work organization which are affecting the interests and positions of workers in each job type.

The study reported on in this paper surveyed participants in the Employe Involvement Program (EI) of a Ford manufacturing plant (referred to as the "Gear") in order to examine the differences in workers' opinions about the EI program by job type.[4] These findings are part of a much larger study of concession bargaining and technological change at that plant. Respondents discussed the effect the program has on the quality of their own working lives, the company's motives for initiating the EI program, and the probability that the program will lead to greater job security.

The Employe Involvement Program at the Gear

Employe Involvement was introduced at the Gear in 1979 through a letter of understanding signed by Ford and the United Auto Workers. However, it existed in name only until 1981. During that year Ford announced that it did not plan to replace the old, high-quality, high-profit product line built at the Gear when the production run ceased. The plant management and union leadership asked for an

TABLE 1
Means of Job Categories

	Assembly	Manufacturing	Skilled Trades
Age:	38.7	44.9	43.5
Seniority	17.2	21.8	19.8
Hire-in age	21.5	22.9	22.7
Sample size:	14	26	20

opportunity to bid on a replacement product for the new Taurus/Sable car line. An active EI program was part of the bid. In addition, a variety of work rule concessions were also made by the workers to support the bid.

EI groups at the Gear are initiated either by the hourly employees or by the supervisors in each department on each shift. Supervisors are not required to form a group, though they have been strongly urged to do so. Nascent groups are fostered by the industrial relations staff and the union committee members who serve as EI coordinators. Participation in EI is voluntary for hourly employees, and attendance varies from meeting to meeting. For supervisors, once a group is established, attendance is mandatory.

Groups meet for one hour each week. Manufacturing and skilled trades groups meet on company time during their shift. Assembly groups meet for an hour before or after their shift, and members are paid one hour of overtime for their attendance. Each group is chaired by an hourly employee elected by the hourly group members.

The content of the group meetings varies over time and by department. The Ford/UAW (United Auto Workers) guidelines for the program limit the groups to topics that are not subjects of collective bargaining. Most issues involve increasing productivity and quality. Problems with machines, tools, stock, the work process, vendors, or the work environment are discussed. These sometimes include complaints about work done by other shifts and departments. Supervisors above the first line are often the subject of critical comments, irrespective of their presence at the meetings.

What Workers Say About EI[5]

Overall, assembly workers have the most favorable evaluation of the program and its effects on the quality of their working experience, while skilled maintenance workers have the least favorable evaluation. Manufacturing workers give the program a mixed rating.

Assemblers. EI has the greatest impact on the daily lives of assemblers. They report that participation makes them enjoy their jobs which they describe as "boring" and "mind numbing." EI meetings themselves are a relief from many aspects of the rigid and repetitive nature of assembly work. Before the program was introduced, assembly workers were never consulted or even spoken to directly about any type of production-related matter. They were not allowed into supervisory offices and most had never had a conversation with a manager above the first-line supervisor. For the first time management is "listening" to suggestions from relatively unskilled workers about better ways of manufacturing and assembling components. One worker said, "Before (EI) you were a number, dirt, just a body. Now the supervisor pays more attention to what you have to say."

Assemblers do not question the company's motivations in the EI program, perhaps because they believe that the quality and productivity improvements that they have realized through the program are tightly connected to job security. "Better quality means better components, means greater competitiveness," said one worker. "We're doing a lot more working things out amongst ourselves than before, our attitudes are better, quality is better and that saves money," said another. They answer criticisms that the program is manipulative by citing their own experience: "A lot of people think it's propaganda, but we've had results. If you have good parts, the job is easier, the day goes faster and it's less boring." And "EI is a very American kind of program, it brings people together, breaks down barriers, builds teamwork—where we can fight back. We gotta have some way of working together to beat the competition."

Manufacturing Workers. Manufacturing workers also feel that the program has added some new dimensions to their jobs, particularly by reducing the social distance between themselves and their supervisors. One worker said, "Before EI, foremen were programmed to think that they shouldn't mingle with hourly personnel—even though they used to be hourly personnel themselves—they have to know that we are not below their level." The program, manufacturing workers say, gives them a needed mechanism to express their concerns about production issues. "It's a good idea because it brings things out to the open—an opportunity to get things fixed." However, manufacturing workers note that since they know the intricacies of their job better than the supervisory staff, communication should have been better: "We shouldn't need EI for that."

Manufacturing workers are more questioning than assemblers about the company's motives. They report that the company's interest in worker involvement fluctuates with corporate earnings: "Now that we got them out of trouble, they're letting it fizzle." And "We come every week and hash out the same junk—the company is only giving the appearance of responding."

While the manufacturing workers believe that increased quality achieved through the EI program can result in increased job security, they are concerned that old management practices, which contributed to the downturn in the domestic industry, are creeping back. As production demands increase, these workers sense that the company has begun to reemphasize numbers of parts over quality of parts. "All management is interested in is the 'numbers,' the more the better. If EI helps, great. If it's in the way of production standards, roll over it."

Some of the negative criticism suggests that manufacturing workers suspect that EI is a replacement for the hourly worker program that granted substantial cash awards for usable suggestions. "It started out as a good idea but the company took advantage of people."

Skilled Trades/Maintenance Workers. Skilled trades/maintenance workers see very little improvement in their work experience as a result of EI. They are already the most autonomous workers in the plant, with the least status differential between themselves and the supervisory staff. Group meetings, in and of themselves, are not particularly favored among workers who pride themselves on their independence. Unlike assembly or manufacturing workers, they have not been able to extend the scope of their activities or their autonomy through the program. Most maintenance workers think EI has institutionalized a communications system that already existed.

However, some believe that even that type of change has not happened. One worker said, "When you've been around as long as I have, you can see that there's been no change." Another added that the failure was in the implementation of the program: "It's a little like communism, it looks better on paper."

It is hard to overstate the level of cynicism expressed by the trade workers about the program. Like many manufacturing workers, skilled trades workers believe it competes with the suggestion program. "EI saves the company a lot of money but there is no direct payoff for the employees." At the extreme, some maintenance workers express concern that the focus of the program is to reduce the company's dependence on the trades' "common knowledge" of the machinery and the production process. And several are concerned about the company's emulation of Japanese management techniques, referring to EI as part of a "Japanization" process.

Skilled trades workers' criticisms of the company's motivation for initiating EI are even more biting. Like some manufacturing workers, skilled trades workers believe that there never would have been an EI program if there had not been a downturn in the company's fortunes. With a return to profitability, they say, the company's commitment has waned:

> When they needed us, they gave us an EI program. Now that they're making record profits, it's going back to the way it used to be.
>
> They've always needed our help but when the company was going down, they began to use us—when things got better, the company says: "I'm running the show."
>
> It's served its purpose. It was a hype.

Explanations of the Variance

1. Relative change resulting from EI varies for each group.

Because assemblers have the least desirable jobs in the plant small, incremental improvements in their jobs and working conditions can have a very big impact. Even attending a meeting can be considered a positive experience relative to other, more typical experiences. On the other hand, manufacturing workers, who have more physical freedom and can usually pace their production, and skilled trades/maintenance workers, who have the widest latitude are unlikely to be easily satisfied.

2. Expectations may differ from group to group.

Skilled trades workers have a much less authoritarian relationship with their supervisors than do assembly or manufacturing workers. They demand the most from the program, and the frequent failure of supervisors to attend meetings is met with greater criticism than from other groups who have fewer expectations of their supervisors.

3. Objective effects of change are more direct for assembly and manufacturing departments and less direct for skilled trades/maintenance workers.

Changes made through EI are limited to quality and productive issues such as stock and parts quality, machine tools, etc. These are changes that can make assembly and manufacturing jobs much easier to do and to do well. As a result, these workers can experience several positive changes as a result of the program. However, most types of remedies available through EI were always within the discretion of the skilled trades workers. Therefore, it would have been necessary to define a different set of allowable issues and possible remedies for issues raised by the skilled trades workers for them to have the positive experiences of other workers.

4. Evaluations may reflect cynicism about other corporate policies at the time.

Assembly workers at the Gear are much more likely than skilled trades/maintenance workers to believe that workers' efforts to improve quality and productivity will lead to increased job security (Table 2). They also supported the 1981 concessions contract by a wide margin, whereas the manufacturing and skilled trades/maintenance workers did not. In addition, the fact that work rule changes negotiated as part of the concessions contract at the Gear included changes in the lines of demarcation for the skilled trades may have influenced how these workers assessed the company's motivation for innovations such as EI.

TABLE 2
Workers' Predictions of Company's Future Action by Job Type

	Worker efforts affect decision to keep plant open	Company does whatever it wants despite worker effort	Total
Assembly	13 (92.9%)	1 (7.1%)	14
Manufacturing	13 (68.4%)	6 (31.6%)	19
Skilled trades	2 (10.5%)	17 (89.5%)	19
Total interviews (missing)			52 (8)
Chi 24.54	DF 2	Prob. 0.00	

The Lessons[6]

The circumstances, working conditions, interests, and expectations of different types of workers must be taken into account in the design and implementation of programs. Positive evaluations occur only when programs have real substance and effect real change. For this reason they should be designed to meet the specific requirements of the type of work done and not promise outcomes, such as increased job security, that may not be directly related to participation in the program. Furthermore, introduction during a restructuring which includes compromises by workers may affect perceptions of the company's motives. Under these conditions, the job innovation may be seen as manipulative and lose its legitimacy with the workers.

Endnotes

[1] "Employe Involvement" is the proper name for the program sponsored by the Ford Motor Company and the United Automobile Workers' Union.

[2] For example, Kochan, Katz, and Mower, 1983, collected basic demographic and union activism information in order to explain the propensity to take part in a participatory program. The dichotomous variable "participation" is the major independent variable of the study.

[3] Typically, blue-collar jobs in the automobile industry are classified into two categories: production and skilled trades. This categorization is more reflective of the organizational politics of the UAW and of the collective bargaining relationship with the companies than it is of the nature of work done by auto workers. In this study "assembly" jobs are defined both by the assembly task, be it final assembly or subassembly and by the invisible tether between the worker and the assembly line. "Manufacturing" jobs include all those involved in the processing or inspection of parts including press work, machining, heat treatment, and other manufacturing processes. Finally, the traditional demarcation for "skilled trades/maintenance" jobs is used here.

[4] This research is based on fieldwork at a components manufacturing plant conducted from late summer, 1983, through early 1985. Access was granted by the parent company, local management, national union, and local union leadership. Free movement within the shop was permitted to observe any operation and to talk with any individual. The stated purpose of the research was a study of the commitment of the company and reaction of the workers to the Employe Involvement program. The fieldwork included participant observation of weekly EI meetings in each of six departments during the 18-month study period. In addition, 75 in-depth interviews were conducted, 60 with workers and 15 with supervisors. The sample was stratified to represent the skill mix and the types of work that are performed in a manufacturing plant. (Table 1.)

[5] Workers' comments on each of several aspects of the EI Program were coded into categories. Cross-tabulations were calculated by type of worker and category of comment for each aspect of the program. The quotations presented in this paper are characteristic of statements in the most representative category for each type of worker.

[6] Both the strengths and the limitations of the case study method are recognized. The small sample sizes for each job type make the comparison of between group and within group variation difficult to analyze. However, the value of the case study method to the development of a research agenda has been well documented.

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Employee Discipline Decision Making

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Although the current management literature is replete with praises and prescriptions for a new, participative management regime (Walton, 1985), the reality of the workplace is frequently one where employee behavior is controlled by traditional discipline systems. Fundamental employee rights as well as work group performance and employee reactions to disciplinary sanctions are affected by the way in which managers make disciplinary decisions (O'Reilly and Weitz, 1980; Luthens and Kreinter, 1975).

Much of existing research about how managers make disciplinary decisions is based on an attribution theory framework (Jones and Davis, 1965). Consistent with attribution theory, research suggests that in deciding how to respond to a behavioral problem, individuals attempt to determine the cause of the problem. In lab studies, the consistency of a performance problem has affected the likelihood of the subject making an internal attribution (attributing the cause of the problem to the individual) and, in turn, the likelihood of a harsh response (Mitchell and Wood, 1979). Similarly, when subjects believed that the reason for the performance problem was a lack of effort or ability, more severe action was taken than if the problem was attributed to task difficulty or bad luck (Pence et al., 1982). Findings regarding the effect of organizational status and family problems (Rosen and Jerdee, 1974) also suggest that managerial decisions are likely to be influenced by the attributions they form.

While attribution theory is a useful framework with which to view disciplinary decisions, it is important to recognize that managers make these decisions within an economic, institutional, and organizational context. These contextual factors may impact disciplinary decisions and even the relevance of any attributions that managers make. For example, in a survey of public sector managers, managers indicated that they would be less likely to take severe disciplinary actions against

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employees who are valuable to the organization (Boise, 1965). Allegedly, the economic implications of losing a valued employee motivates managers to modify their response—independent of attributions regarding fault or causality.

Additionally, since discipline involves the application of sanctions in response to deviant behavior, the relevance of basic notions of jurisprudence is frequently cited (Selznick, 1969). Arbitration precedents and collective bargaining contract language in the unionized sector have even codified certain norms of industrial justice. For example, a guiding principle in the decisions of arbitrators is the avoidance of arbitrary treatment. From this has been deduced the idea that management must apply discipline consistently to employees in order for a sanction for a particular employee to be upheld. Failure to apply discipline consistently is tantamount to the employer waiving future enforcement rights (Elkouri and Elkouri, 1981). And given that arbitration precedents and contract language are frequently thought to influence managerial behavior in unionized and nonunion sectors (Belohlav, 1985), we might expect that decisions about discipline would be significantly influenced by a desire to adhere to norms of industrial jurisprudence that have been institutionalized within the employment relationship.

Another important aspect of the context that surrounds disciplinary decisions relates to management's perceived need for control and desire for managerial authority. The obligation of subordination lies at the heart of the employment relationship (Wheeler, 1985; Commons, 1968), and much managerial behavior is thought to be driven by a desire to ensure that employees remain sufficiently subordinate to managerial authority (Edwards, 1972; Wheeler, 1985). And since disciplinary problems may have significant implications for respect for managerial authority, decisions about discipline are likely to be guided by a desire to ensure adequate respect for that authority. As such, disciplinary problems that show disrespect for authority or otherwise threaten managerial control are likely to result in more severe disciplinary sanctions.

While previous research has examined how managers respond to poor performance, research has not examined how managers respond to other crucial disciplinary problems—such as employee insubordination. Therefore, this study examines the decision process employed by managers when making disciplinary decisions about insubordination. Additionally, by using a within-subjects, policy-capturing design, we will be able to examine the degree to which variation exists across managers in terms of the factors considered in making disciplinary decisions. While research suggests that there is variation in the willingness of managers to apply disciplinary sanctions (O'Reilly and Weitz, 1980), little is known about differences across managers in the factors considered when making these decisions.

In total, six variables were manipulated in this study. Three variables were chosen because of the likelihood that they would affect the attributions that managers make about the cause or consistency of the behavioral problem. Managerial provocation was included because of the expectation that subjects would attribute the cause of the behavioral problem to the provocation (an external attribution) rather than to the employee (an internal attribution). As such, when managerial provocation is present, less severe disciplinary action would be expected. Recent personal problems were included because of the expectation that when such problems were present, managers would again make an external attribution. Put otherwise, the cause of the behavioral problem would be attributed to temporary emotional instability, and as such, less severe action would be taken. Tenure was also included because of the expectation that managers would be less likely to make an internal attribution for senior employees with a good work record because behavioral problems were not consistently observed across the employee's history with the organization.

Three contextual variables were also included. Waiver of enforcement rights was included because arbitration precedents have established that failing to enforce a rule for some results in the waiver of the employer's right to enforce the rule for others. Given the degree to which adherence to the notion of equality of treatment has been institutionalized, we expect, in both union and nonunion sectors, less severe disciplinary action to be taken where management has failed to enforce a rule in a consistent fashion.

Manner of the employee in responding to managerial instructions was included because of its relation to the need for managerial control and authority. Threatening and/or insulting responses by the employee violate norms of deference to managerial authority. To the extent that managers perceive the need for deference to managerial control and authority, such violations are likely to be seen as threatening. More severe disciplinary action would presumably be taken in such situations in order to maintain managerial control.

Criticality of the employee to the production process was included in recognition of the economic context within which disciplinary decisions are made. To the extent that the loss of an employee would impair the production process, less severe disciplinary actions would be expected.

Method

Sample

Participants in this study were human resource practitioners, from 18 organizations, who were attending a university conference on human resource management. All 19 participants had previously made or influenced disciplinary decisions in their organization. The positions held by the participants ranged from plant human resource generalists to vice-president for human resources. The appropriateness of this sample stems from the fact that, typically, disciplinary decisions must be approved by the personnel department before any action is taken.

Procedure

Participants were informed that they would be asked to make a number of disciplinary decisions relating to employee insubordination. Information was provided regarding the setting and the information that would be provided in each scenario. After completing a practice case, participants were presented with the scenarios describing incidents relating to employee insubordination.

The six factors were crossed and balanced in order to ensure orthogonality among the independent variables. High (indicating a positive inference for the employee) and low (indicating a negative inference for the employee) manipulations were used. This resulted in 64 scenarios, which contain all possible combinations of the high and low manipulations of the six factors (tenure, provocation, personal need, manner of employee response, waiver of enforcement rights, and criticality.) Care was taken in the generation of the factors to ensure that no scenarios contained factor combinations that did not make sense. An example of a scenario (low tenure, high provocation, high personal need, low manner, low waiver, and high criticality) is shown in Figure 1. In pretesting the scenarios, the high and low manipulations of the six factors were reviewed by five human resource practitioners in order to assess the degree to which the manipulations actually represented high and low conditions. The recommendations provided were used to modify the manipulations. In the experiment, respondents were asked to read each scenario and indicate what they would do in response by choosing from among nine possible actions. Prior to beginning the exercise, subjects were asked to rate each of

FIGURE 1

An Example of a Scenario that Contains the Factors of Low Tenure, High Provocation, High Personal Need, Low Manner, Low Waiver, and High Criticality

After Smith completed a task, the supervisor looked at the finished product and said, "Hey you stupid idiot, you screwed up again! Do it again and then clean the area, you slob." Smith responded by saying, "You jackass! If you do not like it, do it yourself, you idiot!" The following factors are also present:

1. Smith has valuable skills and would be difficult to replace since many organizations are searching for individuals with those skills.
2. Smith has been with the organization for 14 months.
3. A number of incidents have occurred in the organization where employees disobeyed their supervisor and did not receive any punishment.
4. Smith's spouse has just been diagnosed as having terminal cancer.

these nine options in terms of their severity for the employee. Pretests, confirmed by these ratings, indicated that these alternative actions could be ranked in terms of their severity from 1 to 9 where 1 indicates no action should be taken, 2 indicates counseling the employee, 3 indicates an informal oral warning, 4 indicates a formal oral warning, 5 indicates a written warning, 6 indicates a suspension from 1 to 14 days, 7 indicates a suspension from 15 to 30 days, 8 indicates a suspension of 31 to 90 days, and 9 indicates termination.

Analysis

The rank (in terms of severity for the employee) of the alternative action chosen was used as the dependent variable in the policy-capturing equation. Multiple regression was used to assess the main effect of the six factors on the severity of the disciplinary action chosen. Orthogonal contrast coding (Cohen and Cohen, 1975) was used for the six independent variables. One equation was estimated for each participant and an overall model was estimated for the pooled sample.

Results

Table 1 displays the regression coefficients for the main effects of the six factors manipulated and the R^2 for each rater. The R^2 ranges from .55 to .87 with the average R^2 being .66. The decision policies employed varied substantially across the 19 managers. The coefficient for provocation was significant at .05 for 11 of the subjects. For seven managers, it had the largest effect of the six factors on the severity of the disciplinary action chosen. Tenure was significant for six of the managers and was most heavily weighted by one manager. Personal need was significant for six managers and most heavily weighted by

TABLE 1

Within-subject and Pooled Coefficient Estimates:
Personnel Managers

Subject	Provocation	Personal Problems	Tenure	Criticality/ Substitutes	Waiver	Manner	Intercept	R^2
1	−.594°°	.094	−.250°°	−.094	−.500°°	−.094	4.781	.61
2	−.500°°	.093°	−.187°°	−.219°°	−.218°°	−.500°°	2.625	.67
3	−.328°°	−.046	.014	.015	−.953	−.734°°	3.734	.73
4	−1.046°°	−.203	−.234	.172	−.890°°	.140	6.703	.64
5	.031	−.125°	−.063	.125°	−1.375°°	.031	3.375	.87
6	−.031	−.531°°	−.50	.031	.063	−.063	3.906	.67
7	−.016	−.141	−.046	−.141	−.828°°	−.484°°	4.422	.67
8	.265	−.141	−.234	−.484°°	−1.109°°	−1.484°°	5.046	.69
9	−.015	−.359°°	−.390°°	−.484°°	−1.265°°	−.015	6.703	.64
10	−.672°°	−.015	−.109	−.109	−.015	−.672°°	2.641	.59
11	−.468°°	−.031	−.031	−.031	−.125°	−.343°°	3.938	.68
12	−.891°°	−.265°	−.359°°	−.265°°	−.859°°	−.515°°	5.265	.62
13	−.203°°	.046	.015	.015	−.453°°	−.234°°	4.045	.56
14	−.016	−.078	−.078	−.047	−.578	−.234°°	6.391	.69
15	−.031°	−.093	−.093	−.125°	−.125°	−.500°°	4.375	.55
16	−.062	−.063	−.125°	−.156°°	−.156°°	−.500°°	5.343	.60
17	.031	−.031	−.031	−.031	−.031	−.906°°	2.968	.83
18	−.531°°	−.313	−.125	−.125	−.593°°	−.251°°	4.281	.66
19	−.203°°	−.203°°	−.234°°	−.265°°	−.453°°	−.422°°	4.546	.59
Pooled Sample[1]	−.278°°	−.129°°	−.155°°	−.120°°	−.551°°	−.409°°	4.478	.19

[1] N = 1216

°° = Significant at .01

° = Significant at .05

one manager. Waiver was significant for 16 managers. Waiver had the largest relative impact on the decisions of eight of the managers. For four of these managers, the coefficient for waiver was nearly twice as large as the coefficient for the next most important factor. The coefficient for manner was significant for 14 of the managers. For six managers, manner had the largest effect on disciplinary decisions. And for three of these managers, the coefficient for manner was three times as large as the coefficient for the next most important factor. Value of the employee was significant for eight of the managers. For none of the managers, however, was it the most heavily weighted factor.

All six independent variables for the pooled sample are significant at .05. Across the 19 managers, waiver was weighted most heavily by the managers followed by manner, provocation, tenure, personal need, and value to the firm. Additional analysis (tables were excluded because of space limitations) also included three variables relating to the subjects' background: experience, industry, and whether the manager was employed in a unionized or nonunionized sector. All three variables were significant, suggesting that managers who had more experience, who were from the manufacturing sector (as opposed to the service sector), and who were working in a unionized firm chose more severe disciplinary responses.

Discussion

The results suggest that, consistent with attribution theory, managers attempt to infer causality when making disciplinary decisions. Considerable weight was assigned to provocation, tenure, and personal need by many of the managers. Fifteen of the managers placed a significant degree of weight on at least one of these three variables. Interestingly though, tenure and personal need, on average, had less influence on disciplinary decisions than provocation. While all three variables presumably resulted in an external attribution regarding the cause of the insubordination, provocation may have had a more significant impact because management was perceived as being the external cause. And when management is perceived as the cause of the behavior, it might be seen as inappropriate for management to take severe action in response to that behavior. However, some variation exists in this regard in that eight managers did not consider provocation when making decisions. Perhaps this suggests that for some managers, employees are obligated to obey orders even when those orders are insulting to the employee.

While variables likely to impact the attributions of managers were important determinants of disciplinary decisions, contextual variables had an even more significant impact. Waiver of enforcement rights (as reflected in the failure to punish previous insubordination) had, on average, the largest impact on the severity of the response. This suggests that at least among experienced personnel managers, notions of jurisprudence as established in both common law and arbitration precedents influenced managerial decision making. This is of particular interest in that it suggests that "the rule of law" (as reflected in the institutional arrangements surrounding the employment relationship) influences disciplinary decisions. In suggesting this, however, it is important to note that the sample studied here included human resource professionals who, perhaps, have a heightened awareness of the institutional arrangements surrounding the employment relationship.

The manner of the employee's response to the manager's order had the second largest impact on disciplinary decisions. When employees displayed disrespect (in addition to disobedience), they received much harsher sanctions than when they simply disobeyed the supervisor. Given that disrespect may threaten managerial control and authority, the weight that was assigned to manner suggests that the perceived need for control and authority plays an important role in determining disciplinary outcomes. The failure to show adequate deference to managerial authority may be seen as threatening the maintenance of the desired dominant-subordinate relationship.

While the value of the employee did influence managerial decision making in the direction expected, the magnitude of the impact was relatively minor compared to waiver of enforcement rights or manner of response. Interestingly, this suggests that while the immediate economic implications of the decision were relevant, such considerations were far less salient than basic notions of jurisprudence or the perceived need for maintaining managerial authority.

Though some generalizations about the subjects are possible, it is important to recognize that different decision policies were used by different subjects. For example, while on average, waiver and manner were extremely important factors, several managers gave little weight to these factors. Similarly, while tenure and personal need typically were less important determinants of managerial decisions, they were extremely important for a few managers. Our finding regarding the diversity in the policies used by human resource professionals raises important questions regarding the source of that diversity. For example, to what extent is that diversity a function of individual differences in personality, belief systems, or the awareness of institutional arrangements surrounding the employment relationship? Or do organizational factors such as disciplinary policies, the history of the labor-management relationship, or production needs influence how managers make disciplinary decisions?

This study has found that variables likely to impact attributions about the cause of a disciplinary problem can influence managerial decisions. However, this study has found that contextual factors (particularly as they relate to notions of industrial jurisprudence and managerial control) play a key role in disciplinary decision making.

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Upper Echelon Theory and Quality of Work Life Programs

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The popular press and managerial literature have paid increasing attention to the participative practices of successful European and Japanese companies. Although some forms of labor-management cooperative programs have existed in the United States for many years, with growing environmental pressures the 1980s saw a significant increase in employee involvement programs (Gershenfeld, 1987). Growing numbers of companies are experimenting with programs such as quality circles, productivity-sharing plans, and other quality of work life types of programs that feature greater employee involvement in decision making. These innovative programs are often adopted to improve upon union-management relations, to increase both productivity and quality, and to stabilize the work force (Gorlin and Schein, 1984). One interesting question that arises is—Why are some companies willing to adopt these programs and others are not?

Upper echelon theory suggests that an organization's strategies and practices are reflections of the beliefs and values of its key decision makers (Hambrick and Mason, 1984). Kochan, Katz, and McKersie (1986) propose an industrial relations model in which management plays an active role in shaping the system. The focus is on management since ". . . in recent years the most important strategic decisions have been made by this party" (Kochan, McKersie, and Cappelli, 1984, p. 17). The central thesis of the present paper is that the beliefs and values of top management influence the implementation of participative programs, and the effects of top management demographic characteristics on employee participation are examined. Upper echelon theory suggests that the demographic characteristics of top management such as age, tenure with the organization, education, and functional background act as observable measures of beliefs and values (Hambrick and Mason, 1984).

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Theoretical Background

Traditional industrial relations theory focused on the role of the external environment in shaping the industrial relations system. Dunlop's (1958) framework suggests that the environment exerts a deterministic effect on industrial relations outcomes. Kochan et al. (1986) present a revised theoretical framework for understanding the current changes in the industrial relations system. Their model suggests that changes in the external environment pressure businesses to make adjustments in their business strategies, and that industrial relations outcomes result from an interaction between environment and the company's strategic response. The model focuses on strategic choice in which the beliefs and values of management play an important role in shaping competitive business strategies. Although labor, management, and government exercise choice, the emphasis is on management since the initiative for change has come largely from this party (Kochan et al., 1984).

Kochan et al., (1986) also suggest a three-tier institutional structure. The top tier refers to the level where long-term strategies are formulated. For employers these include business, investment, and human resource strategies. The second tier consists of collective bargaining and the formulation of personnel policy. The third tier encompasses workplace and individual/organization relationships. This tier refers to supervisory style, employee participation, and job design. Decisions made at the top tier are expected to shape worker participation at the third tier.

The organizational behavior literature suggests that a dominant coalition or an inner circle of key decision makers develops within a company (Thompson, 1980). The beliefs and values of this dominant coalition exert influence over the strategic management process (Hambrick and Mason, 1984; Lorsch, 1986; Schendel and Hofer, 1979). Behavioral theorists suggest that complex organizational decision making is characterized by bounded rationality (Cyert and March, 1963; March and Simon, 1958). Decision makers bring with them knowledge of assumptions, alternatives, and consequences which reflect their cognitive bases (March and Simon, 1958). These behavioral factors are important for understanding how strategic decisions are made.

Hambrick and Mason (1984) suggest that managerial perceptions of the environment are shaped by the cognitive bases and values of key decision makers. Managers selectively perceive and interpret information from a limited field of vision. These perceptions combine with top management values to shape strategic choice. Upper echelon theory suggests that observable demographic characteristics such as age, tenure with company, education, and functional background act as measures of the cognitive base and values that the manager brings to the decision-making process, and that they influence the company's willingness to innovate and take risks. Managers who are young, hold less tenure with the company, and have a higher level of formal education are expected to be more innovative (Bantel and Jackson, 1989). These managers are expected, therefore, to be more willing to implement a variety of innovative programs.

Furthermore, the diversity of demographic characteristics of top management has important implications for the organization (Pfeffer, 1985). The present paper proposes two counter arguments. First, the heterogeneity of the dominant coalition can bring a diversity of viewpoints to the decision-making process that can promote risk-taking and innovation (Bantel and Jackson, 1989). Thus, the heterogeneity of age, tenure, education, and functional background are expected to contribute to the adoption of participative programs. On the other hand, the similarity of demographic characteristics is expected to promote the development of cohorts. Homogeneous top management groups are characterized by greater communication and less conflict (Pfeffer, 1985) that may contribute to the implementation of new programs.

The present study tests the following hypotheses:

H1: The age of top management shows a negative relationship to the implementation of participative programs.

H2: The tenure of top management shows a negative relationship to the implementation of participative programs.

H3: The level of formal education shows a positive relationship to the implementation of participative programs.

H4: The diversity of age, tenure, education, and functional background of top management influences participation.

H4a: The homogeneity of age, tenure, education, and functional background in top management shows a positive relationship to the implementation of participative programs.

H4b: The heterogeneity of age, tenure, education, and functional background in top management shows a positive relationship to the implementation of participative programs.

Methodology

Sample

The sample included the largest manufacturing firms identified by *Business Week* (1985). Questionnaires were mailed to the Vice President of Human Resources (or to the CEO if unavailable) of 645 firms. The respondents were identified in Standard and Poor's *Register of Corporations, Directors, and Executives* (1985) and in Dun and Bradstreet's *Million Dollar Directory* (1985). Following a second mailing of the questionnaire, a total of 159 companies responded for a response rate of 25 percent. Respondents and nonrespondents did not differ in industry or profitability (return on equity). Larger companies as measured in terms of sales tended to answer the questionnaire more so than smaller companies.

Participation

The dependent variable, participation, was measured by means of a questionnaire. Respondents reported on the implementation of formal programs for the involvement of employees in decision making. Extensive cross-cultural studies have shown that formal prescriptions for employee involvement act as good predictors of actual employee involvement (Industrial Democracy in Europe, 1981). Respondents reported the number of hourly employees involved in each of the following programs on a scale of 1 (none) to 5 (all): problem-solving groups, autonomous work teams, business teams, productivity-sharing plans, employee-management joint programs, quality circles, and quality of work life programs. Respondents also reported on the overall percentage of employees in programs since one employee could be involved in more than one program. Respondents reported separately for union and nonunion settings.

The present study includes three measures of participation derived from questionnaire responses. The first measure is *number of programs* which can range from zero to seven programs implemented. The second measure is average *number of employees* in programs. This measure was calculated as the mean of the company's responses to all seven programs and can range from one (no employees involved in any program) to five (all employees involved in all programs). The third measure of participation is the *percentage of employees* in one or more programs, which ranges from 0 to 100 percent. Again, respondents rated union and nonunion participation separately.

Demographic Characteristics

Information for the independent variable, demographic characteristics, was collected for each manager from CEO down to Vice President for the responding companies from Dun and Bradstreet's *Reference Book of Corporate Managements: America's Corporate Leaders* for 1986. The age of each manager and his or her tenure with the company was recorded. The amount of education was recorded as: 1 = High School, 2 = Bachelor's Degree, 3 = Master's Degree, 4 = JD, 5 = Doctorate Degree. The functional background of each manager was recorded as marketing/sales, finance/accounting, production/research and development, administrative (legal, personnel, corporate affairs, etc.), and general management.

Means and standard deviations were calculated for the top management team for age, tenure, and amount of education. The diversity of functional background was calculated according to Blau's (1977) formula:

$$\text{Functional Background Diversity} = 1 - \sum_{i=1}^{5} a_i^2$$

(where a = proportion of top managers in each functional area)

Control Variables

The following variables were included as controls since they might confound the interpretation of results: percentage of hourly employees unionized and size. Percentage unionized was derived from the questionnaire responses. Size was measured as sales for 1986 and was recorded from *Business Week* (1987) and Standard and Poor's *Stock Reports* (1987).

Analyses

First, top management characteristics and participation are correlated to see if there is any relationship. Second, the measures of participation are regressed on the demographic characteristics and control variables to further sharpen the interpretation of the results.

Results

Most of the responding companies (119) have both union and nonunion settings. Of the remaining 40 companies, 8 reported only union settings and 32 only nonunion settings. Companies had a mean of 2.98 programs in union settings and 3.47 programs in nonunion settings. On the average, they had some employees in each program; on a scale of 1 (none) to 5 (all), union settings scored 1.59 and nonunion settings scored 1.75 for number of employees in all programs. Approximately 24 percent of union employees and 34 percent of nonunion employees were involved in more than one program.

Table 1 shows the Pearson product-moment correlations between top management demographic characteristics and the measures of participation. Age shows a significant ($p \leq .05$) negative relationship to the percentage of employees in union and nonunion settings. The diversity of age shows a significant negative relationship to the number of programs in union and nonunion settings. Average tenure shows a positive relationship to the number of programs in union settings. The amount of education shows a strong, positive relationship

TABLE 1

Correlations Between Top Management Demographic Characteristics and Participation

Demographic Characteristics	Participation: Number of Programs — Union	Number of Programs — Nonunion	Number of Employees — Union	Number of Employees — Nonunion	Percent of Employees — Union	Percent of Employees — Nonunion
Age						
Mean	.06 (n=113)	.02 (n=134)	−.01 (n=113)	−.11 (n=130)	−.21°° (n=112)	−.24°° (n=133)
Standard Deviation	−.22°° (n=113)	−.14° (n=134)	−.08 (n=113)	−.09 (n=130)	.10 (n=112)	−.03 (n=133)
Tenure						
Mean	.16° (n=115)	.08 (n=136)	.15 (n=115)	.06 (n=132)	.04 (n=113)	.06 (n=134)
Standard Deviation	−.04 (n=115)	−.09 (n=136)	−.04 (n=115)	−.11 (n=132)	−.04 (n=113)	−.03 (n=134)
Amount of education						
Mean	.28°° (n=113)	.25°° (n=132)	.30°°° (n=113)	.27°°° (n=128)	.18° (n=112)	.21°° (n=131)
Standard Deviation	−.08 (n=113)	−.16° (n=132)	.05 (n=113)	−.10 (n=128)	.15 (n=112)	.03 (n=131)
Functional background						
Diversity	−.01 (n=115)	−.04 (n=136)	−.05 (n=115)	−.12 (n=132)	−.18° (n=113)	−.23°° (n=134)

° $p \leq .05$
°° $p \leq .01$
°°° $p \leq .001$

to all the measures of participation in both settings. The diversity of education is negatively related to the number of nonunion programs. Finally, the less the functional diversity, the significantly greater the percentage of union and nonunion employees in programs.

Table 2 shows the results of regressing the participation measures on top management demographic characteristics and control variables. As expected, age shows a significant negative relationship to the percentage of union and nonunion employees in programs. Hypothesis 1 receives support. The amount of formal education shows significant positive relationships to number of programs (union and nonunion) and number of employees in programs (union and nonunion). Thus, Hypothesis 3 receives strong support. Finally, the diversity of functional background shows a significant, inverse relationship to the percentage of union and nonunion employees in programs. This finding lends support to Hypothesis H4a. All other hypotheses are rejected. In addition, size of company (sales) shows a

TABLE 2

Results of Regressing Participation on Top Management Demographic Characteristics

Independent Variables	Dependent Variables (Beta Coefficients): Number of Programs		Number of Employees		Percent of Employees	
	Union (n=106)	Nonunion (n=124)	Union (n=106)	Nonunion (n=122)	Union (n=104)	Nonunion (n=124)
Demographics						
Age - Mean	−.02	−.03	−.05	−.15	−.22°	−.28°°
Age - SD	−.18	−.10	−.02	−.05	.17	−.02
Tenure - Mean	.05	.02	.11	.09	.16	.15
Tenure - SD	−.00	−.06	−.05	−.10	−.14	−.05
Amt. education - Mean	.23°	.20°	.28°°	.23°°	.16	.17
Amt. education - SD	−.03	−.12	.11	−.04	.19°	.10
Functional Diversity	.03	.02	−.06	−.08	−.26°°	−.23°°
Controls						
Percent Union	.04	−.08	.04	−.07	.24°	.00
Sales	.27°°	.29°°	.25°°	.19°	.08	.16
R^2	.20	.17	.19	.15	.24	.20
F Value	2.70°°	2.55°°	2.55°°	2.19°	3.23°°	3.17°°

° $p \leq .05$
°° $p \leq .01$

significant, positive relationship to several measures of participation. These results are consistent with previous findings in which larger companies are characterized by more formal employee participation (Freund and Epstein, 1984). The percentage unionized shows a significant, positive relationship to the percentage of union employees in programs. Freeman and Medoff (1984) suggest that unionization "rationalizes" management. Thus, management may involve unionized employees in programs in an effort to boost productivity.

Discussion

The results of the present study lend support to the industrial relations model suggested by Kochan et al., (1986) and to upper echelon theory developed by Hambrick and Mason (1984). Top management demographic characteristics such as age, education, and diversity of functional background exert significant effects on the implementation of quality of work life types of programs. Companies with managers who are younger and better educated are more willing to take risks and implement innovative employee participation programs. Less functional diversity may contribute to the implementation of programs by promoting communication and reducing intragroup conflict. As the demographic characteristics of top managers in corporate America change, we can expect to see their changing beliefs and values put into practice. As younger and better-educated managers enter the upper echelon, the future may bring with it more employee involvement in decision making.

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XVI. WORKER PREPARATION AND SKILL FORMATION IN THE U.S.

Redesigned Work: Hourly Training for the 1990s

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Changes in the competitive environment and labor force require new visions for management/labor relationships and designs for work systems (Lawler, 1986). This paper briefly reviews the issues that management and labor face in the environment of the 1990s. The impact of restructured and redesigned organizations on the design of jobs is discussed as it relates to the training requirements of hourly workers. An automotive component plant is used as an example of how both union and management can jointly work toward redesigning work systems that meet both company and union needs. The training needs, objectives, and rationale for the training components are presented. This is followed by a discussion of training results. Implications of this plant's experience are discussed.

Union Difficulties

The economic impact of the U.S. decline in competitiveness has created a lack of confidence in traditional union/management relations. Lawler (1986) and Yankelovich and Immerwahr (1983) have argued that significant improvements in the U.S. competitive capability are unlikely if traditional management/labor relations continue to prevail. Heckscher (1988, p. 53), reports public opinion polls showing a lack of public confidence in labor leaders and organizations and an overwhelming belief that the country would be better off if unions had less power. Correlated with this loss of

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confidence are significant losses in membership over the last decade (Handbook of Labor Statistics, 1985). Hourly workers are dissatisfied with their jobs and do not see the union as a source for remedying their concerns. Yankelovich and Immerwahr (1983) describe a "commitment gap" in which workers are, by their own admission, giving less than they are capable of giving to their jobs as a way of expressing their work dissatisfaction. In specific cases, the Communication Workers, Auto Workers, and Steelworkers have all developed new relationships with their management counterparts. When these relationships have been appropriately structured and designed, the companies and their unions have achieved successes unrealized by others in the same industry who have yet to change basic relationships at both the leadership and shop floor level. Evidence is accumulating that new cooperative approaches are helping both labor and management achieve its goals (Heckscher, 1988).

Organizational and Work Redesign

The globalization of the American economy has created great stresses on all sectors of American business and labor. Market competition has increased dramatically, information technology continues to advance, and work force demographics are changing. To compete in this arena, management has had to reexamine its strategies. Downsizing, restructuring, retooling, and transforming have become the management operatives of the last half of the 1980s (Lawler, 1986; Peters, 1988; Twiss, 1988; Nelson-Horchler, 1988; Sheppeck and Rhodes, 1988). Most observers suggest these are just the start of new ways of doing business.

Reduced costs and increased flexibility are the principal drivers of changes in organizational structure and design. Becoming flatter and leaner addresses cost reduction. Flexibility can be addressed by creating a team-based organization, with team members cross-trained to perform all aspects of the team's work. Companies in the 1990s will be primarily team-organized and customer-oriented (Peters, 1988; Nelson-Horchler, 1988). This, along with the movement into participative systems, creates the potential for fewer employees to meet increased demands. However, it also requires fundamental changes in management roles and the way work systems are designed. In organized settings the union can, and should, play a major role in shaping the design of reward and work systems. Lawler (1986) calls these redesigned companies "new design organizations."

Traditionally, management has designed work, and organized labor has reacted to the work design as it impacts contractual issues (e.g., classifications, wages, and safety). The basic model for management through the 1970s was an autocratic, hierarchically structured system. Scientific management principles (Taylor, 1911) were used to divide labor and define jobs. This model vests power, rewards, and information in the hands of a centralized management/union hierarchy. Jobs in this system are designed to narrowly focus the job holder on a few tasks that utilize a minimal number of skills. This results in job classifications that restrict organizational flexibility and limit satisfaction of employees' psychological needs. Recent and expected changes in corporate culture, business strategies, and organizational design make traditional procedures for designing work inadequate for these "new design" organizations.

A significant aspect of work satisfaction comes from how well jobs satisfy the social and developmental needs of employees (Hackman and Oldham, 1980). Redesigning work from a set of simplified, individual tasks to a set of outcomes a team has responsibility for accomplishing addresses many of the problems faced by labor and management. The theoretical and empirical literature surrounding work redesign (Champoux, 1980; Evans, Kiggundu, and House, 1979; Hackman and Oldham, 1980; Mroczkowski and Champagne, 1984; Sims and Manz, 1982) suggests that this approach meets the employees' social and developmental needs while improving the effectiveness of the organization.

The design of group work systems has gone under various aliases. Placing the words "work group" after each of the following provides a partial list of labels: semiautonomous, self-managing, self-directed, self-regulating, cellular, and composite. While some differences exist in methodology, the basic concept remains stable. That is, the characteristics of jobs are changed so as to increase the meaningfulness of the work, the autonomy with which the work is performed at the group and individual level, and the knowledge of results provided to the group. Jobs become more complex because a wider variety of tasks is included and more decision making is required on the part of the individual worker. This means that training must be provided to give employees the knowledge and skills necessary to deal with the added complexity of their responsibilities. Because people are asked to work in teams rather than as individuals, they must also receive training to enable them to manage their own group dynamics and processes. Training then, becomes critical in the transition from a traditional environment to a high-involvement team environment.

Training

As indicated previously, organizations in the 1990s will be flatter and leaner and have greater emphasis on teams. An automotive component plant in the Midwest was undergoing such a transformation and serves as an example of what hourly training might look like during the next decade. The training was a part of a larger work redesign effort organized around teams with end product responsibility (a finished component part). A union/management steering committee working with an outside consultant designed the work system and oversaw all aspects of the training.

Training Environment

Fifty union members took part in the training. Many had difficulty reading, writing, or computing simple arithmetic problems while some were working on master's or bachelor's degrees. A program was already in place within the plant providing basic education. Those with basic education deficiencies, scheduled to be in the teams, were encouraged to enroll in this program. The training, where possible, was designed within these limitations. Training took place in a conference room at the plant and was conducted during day shift working hours. Trainees received normal pay while being trained. Eighty-eight hours of training was provided: 40 hrs. technical; 20 hrs. manufacturing/business; 12 hrs. interpersonal skills; 12 hrs. team building; and 4 hrs. of problem solving (previous SPC training covered many aspects of problem solving).

Training Purpose

The purpose of this training was to provide those involved with the skills and knowledge necessary to work as interdependent semiautonomous teams. Ultimately, they were to assume responsibility for all aspects of their operation. Based on the work design, the skill requirements below were identified.

Training Content

The training described here is generic and required of any set of individuals involved in group-based production systems where responsibility for the finished product rests primarily with those directly involved in its production. Training modules for team building, problem solving, and interpersonal skills were developed by outside vendors with steering committee review. Technical and manufacturing training were provided by in-house management personnel and equipment vendors.

Technical Training. Trainees were instructed in all the technical requirements of operating their automated equipment and learned to perform diagnostic analyses of that equipment. The technical interdependencies within the team were identified and each member of the team was trained in the operation of all the team's equipment and machinery.

Rationale: The basic need for group and team training stems from the interdependencies that exist between and within groups while operating in a coordinated fashion to produce a common product. Unless the trainees have some appreciation of the interdependence of team members on each other and other groups, the training will appear to have little relevance for them.

Business/Manufacturing Processes. Trainees were given instruction in basic manufacturing processes related to their operation including all the support requirements (e.g., materials handling, maintenance, inputs required for various operations, inventory, scheduling, how their operation transforms the product, and what their customer needs from the product). Techniques for evaluating the effectiveness of their processes and product and process modification strategies were covered.

Rationale: Unless all members of the team understand the system within which their operation exists and the business implications of their processes, they will be unable to make appropriate decisions about their operations and will not be able to adequately adjust or evaluate their performance.

Interpersonal Skills (3 modules)

Communication. Effective communication skills and strategies relating to team members, other teams, management, support groups, customers, and suppliers were presented and practiced. Communication that was nonthreatening, understandable, and to the point was stressed. Vocabulary adequate to describe manufacturing equipment, processes, and product was introduced. Trainees were presented with, and practiced, techniques that would indicate their understanding of communication from others, allow them to seek clarification, and encourage others to share information required by the group. The trainees were presented with, and practiced, techniques for confronting undesirable behavior on the part of others in a manner that was descriptive, oriented toward problem solving, clearly indicated the consequences of continued undesirable behavior, and allowed the parties to move toward clearer mutual expectations.

Rationale: Communication is the cornerstone of any group activity. Appropriate strategies must be readily available for providing others with the information they need in order to act in a concerted fashion with the team. Team processes and external relations require that team members acquire and understand information relevant to their operational responsibilities: Also required is the ability to confront problem behavior in others. This training is required for the effective utilization of the conflict management and problem-solving training which follow.

Conflict Management. Trainees were provided with an understanding of how conflict arises, the positive and negative effects of conflict, their personal preferences for handling conflict, and alternative methods of managing conflict.

Rationale: Conflict is inevitable and desirable in teams. Each member of the team needs to manage conflict in a manner that is productive rather than destructive.

Group Problem Solving Strategies. Trainees were provided with, and practiced, various group problem-solving techniques. These included fishboning, Pareto analysis, brainstorming, nominal group, and Delphi. The techniques were utilized for group, interpersonal, mechanical, and manufacturing problems.

Rationale: For a group or individuals to be effective they must be capable of finding solutions to the problems they face. One of the principle reasons for using teams is that they are usually capable of reaching higher-quality solutions than individuals. However, this assumes they have the right problem-solving tools to work with.

Team Building. Trainees were provided with an understanding of individual differences and practiced ways to utilize these differences in creating and assigning flexible team roles. The trainees received instruction in how to develop and set realistic goals and objectives and how to develop an operating plan to achieve them. Factors impacting group dynamics were presented, and techniques for improving group dynamics were practiced. At the end of this module, trainees developed a set of goals for their team and an implementation plan for achieving those goals.

Rationale: The team must operate in a coordinated fashion, managing its processes and dynamics. To do this team members must understand group dynamics and be able to structure their processes to take advantage of their assorted strengths and weaknesses as individuals. They must be able to set appropriate goals for themselves; develop appropriate procedures, roles, and responsibilities; and insure that team norms are respected.

Training Evaluation

Employees who had been selected to be members of these teams were assessed on the above set of skills and abilities. If trainees scored above a predetermined level they were not required to take the training (but could if they desired). Trainees were assessed again at the completion of training. Trainees scoring lower than the predetermined level were asked to retrain.

Only the interpersonal skills development, problem-solving, and team-building training were evaluated. Trainees scores improved an average of 49.4 percent from pretest to posttest. One person showed no gain and one other person showed a drop. Two people showed gains but did not reach the predetermined level of proficiency necessary to graduate from training. The remaining trainees showed gain and reached the required proficiency as measured by the posttest. During the first year of operations, it became clear that the manufacturing/business skills were less well developed than necessary for these teams. Remedial training was provided. Currently these teams are described by union and management as among the most effective operations in the plant.

Implications For Other Organizations

The global market is placing pressure on organizations to adopt more efficient and flexible systems. The "high involvement team" approach to work design is gaining popularity and promises to meet the needs of labor and management. However, this does not come cheaply. Moving from traditionally designed work systems in which each person is required to perform only a few specialized tasks under relatively close supervision to a team design is a fundamental change in how business is conducted. As such, training aspects of an overall planned change effort, in which the appropriate support systems, reward systems, and information systems are modified, must also change. Team approaches require broader and deeper skill levels than traditional job designs. For the first time, hourly employees are receiving training previously reserved for management. Upfront training costs are high and other organizational systems must be restructured to support a high involvement team approach. A side benefit of this training is that hourly employees in this plant found the business, interpersonal skills, and team building training to be of use not only in the factory but also in their personal lives.

On the cost side, both union and middle-level management are threatened by this approach. It changes the roles of both. As teams take on responsibilities for managing their work processes, management and staff support needs dwindle. As the team manages its group processes, grievances and disciplinary actions dwindle, reducing the staff needed to oversee these actions. These and other issues need to be addressed in a joint union/management forum prior to initiating a high involvement team approach.

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The Impact of Participation in Apprenticeship

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Previous studies of apprenticeship have suggested that apprentices are better educated, more productive, learn new skills faster, are promoted more often, suffer less unemployment, and earn more than people who learn their skills in other ways.[1]

Apprenticeship emphasizes learning from the job as well as learning for the job. The instruction and on-the-job training components are related experiences; apprentices learn the theory and practice of their work simultaneously. Because apprentices understand the theory behind their jobs, they adapt more readily to job changes without requiring extensive retraining. Apprentices are also trained in all aspects of their craft, making them more flexible in terms of work assignment. Perhaps the most important skill they possess is the capacity for continuous learning. Apprenticeship holds the potential to be at least part of the solution to the country's current and future shortage of skilled workers and changing labor demand. However, in order for this to happen, apprenticeship would have to be extended to new and much broader occupational categories. In support of the effort, the International Union of Operating Engineers, under contract with the U.S. Department of Labor, conducted an 18-month study to ascertain the costs and benefits to individuals who participated in apprenticeship programs.

This study utilizes the data from the National Longitudinal Study of the High School Class of 1972 (NLS) to estimate the effect of apprenticeship training relative to classroom vocational or academic instruction on subsequent employment and earnings. The NLS contains information on later education, training, employment, and

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earnings of the senior class of 1972. Four follow-up surveys had been undertaken covering the period from graduation through October 1979. A fifth follow-up through February 1986 was carried out on a subsample of this cohort. At this point, the class of 1972 averaged 32 years of age. This paper describes the experience of the apprentices relative to a comparison group that received only classroom vocational or less than a baccalaureate academic training.[2] In this study an apprentice is defined as someone who reported participating in a registered apprenticeship program in one of the first four follow-up surveys (1972-1979). The 1986 survey was treated solely as follow-up data.

Only some of the 12,841 respondents to the Wave 1 through Wave 4 NLS file were of interest for this analysis. All individuals were deleted who, at the time of Wave 4 (1979), had a college or advanced degree or whose primary educational activity was the pursuit of a four-year academic or graduate or professional degree. Also excluded were individuals who had participated in other forms of training such as employer provided on-the-job training. However, because individuals in apprenticeship or other forms of training also take vocational or academic course work, all individuals enrolled in academic programs were not deleted. Of the resulting sample of 8,072 individuals, 571 had participated in apprenticeship training and 1,753 had had only classroom academic or vocational training beyond high school. Thirty-four percent of the sample from the earlier waves were not sampled in Wave 5. Of the 571 potential participants in apprenticeship programs, 30 percent (171) were not sampled in Wave 5. Of the 400 included in the sample, 38 did not respond, yielding a response rate of 90.5 percent. A total of 362 participated in an apprenticeship program at some time between high school graduation and the fall of 1979. Table 1 indicates the composition of the sample groups with regard to race, gender, high school program, and socioeconomic status. They are quite comparable, with approximately 12 percent black and 11 percent other racial and ethnic categories. As might be expected, however, the apprentice sample is 87 percent male versus 44 percent for the comparison group.

The procedure for the construction of a comparison group was to match those in the former group who had received only classroom vocational training or less than baccalaureate academic education to those who participated in apprenticeship training. The matching was performed using four variables; race, gender, high school program, and socioeconomic status. Socioeconomic status is, in turn, a construct

TABLE 1
Characteristics of the Sample
(Column Frequency, Unweighted)

	Apprenticeship	Comparison	Total
Race			
white	78.4	77.6	78.68
other	21.6	22.4	21.32
Gender			
male	87.4	43.5	46.79
female	12.6	56.5	53.21
High School Program			
general	43.5	43.5	43.5
academic	29.2	29.2	29.2
vo-tech	27.2	27.2	27.2
Socioeconomic Status			
low	25.0	25.0	25.0
medium	58.7	58.7	58.7
high	16.3	16.3	16.3
Total	356	818	1,174
Row percent	30.0	70.0	100.0

that includes the following variables: father's education, father's occupation, mother's education, family income, and household items. Household items is, in turn, a construct that includes the presence in the parental household of certain items related to socioeconomic status. The match variables were recoded into categorical variables and cells were created that included the various combinations of the variables. The members of the comparison group were then matched to the cells of the apprentices and the resulting numbers weighted by the inverse ratio of the cell frequencies. The resulting weighted frequencies were 356 in each group. As a consequence of the use of this matching and weighting procedure, the regression results presented later are weighted regressions. Also, as a consequence of the matching and reweighting of the comparisons, the resulting distributions of the comparison group members on the matching variables are identical to the apprentices. Table 1 indicates the unweighted distributions of the two groups on the match variables. Because of differing occupational distributions of the males and females and the consequent effects on wages and earnings, the later analysis of earnings is carried out separately for males and females.

Table 2 indicates the distribution of the matched apprentices and comparisons on several relevant variables not included in the matching

TABLE 2

Characteristics of Apprentices and Comparisons
(Column Frequency)

	Apprenticeship	Comparison	Total
Educational Attainment			
missing	0.0	0.2	0.1
no col, no voc	21.6	22.0	21.8
vocational	52.0	30.2	41.1
some college	25.8	46.2	36.0
col grad or more	0.6	1.3	0.9
High School Grade Average			
missing	5.6	6.8	6.2
A	2.0	3.0	2.5
A - B	8.7	10.3	9.5
B	17.7	15.4	16.6
B - C	32.3	32.6	32.4
C	21.9	20.9	21.4
C - D	10.4	9.8	10.1
D	1.4	1.2	1.3
Union Membership			
member	73.6	43.9	58.8
Total	356	356	712
Row percent	50.0	50.0	100.0

algorithm; educational attainment, high school grades, and union membership.

The extent of union membership among the apprentices and comparisons is as might be expected. A high proportion of the apprentices (74 percent) were members of a union at some time between graduation from high school and 1979, compared to 44 percent of the comparison group. The correlation between the union membership and the apprenticeship variables is not that high (.39), and the number of union members among the comparisons is substantial (more than 300 unweighted). Consequently, there is a resulting significant and separable effect for each of these variables.

Table 3 includes regression-adjusted earnings estimates for males and females separately for each of the years available. The union variable is in all cases significant, generally at the 1 percent level. There is a separate positive apprenticeship coefficient. It is significant at the 5 percent level or higher in five of the seven years for the males and four of the seven years for the females (generally the later years in the sequence). Further, in stepwise regressions, the apprenticeship variable always entered first, followed by the union variable which reduced the coefficient of the apprenticeship variable. The significance of the results for the females suffers from their relatively small

TABLE 3

Earnings Regressions Apprenticeship Weighted Independent Variables

Earnings (Dependent Variable)	Intercept	Minority	Apprentice	High School Program Academic	High School Program Vo-Tech	Union	Socioeconomic Status Low	Socioeconomic Status High	F
Males									
1975	6036.99***	−1123.69**	1157.77***	612.77	769.07*	1589.06***	−589.32	−578.75	6.67
1976	6829.49***	−904.88	834.80*	336.15	184.63	2818.50***	−877.56*	−379.43	8.71
1977	8811.49***	−870.36	1032.61**	473.90	657.64	2907.25***	−1036.95*	−772.96	7.88
1978	10357.54***	−988.62	695.99	745.15	61.50	3288.80***	−313.81	−822.54	6.70
1979	11555.72***	696.96	1476.52**	1409.00*	72.83	3749.51***	−1159.79	59.46	6.89
1984	15392.78***	−643.25	3481.96***	2261.16*	705.55	5199.32***	−2467.46*	−1033.98	7.10
1985	17163.72***	144.50	4656.96***	2602.37*	1316.64	4234.37***	−3866.86***	−950.01	7.02
Females									
1975	3055.66***	−414.26	93.48	656.97**	234.29	1264.84***	353.90	−412.34	4.01
1976	3162.90***	22.83	83.45	746.41	592.82	1234.13***	150.60	1506.91**	2.62
1977	3441.80***	1298.66***	1177.90**	−434.56	35.65	1745.06***	427.16	1144.92**	6.56
1978	4027.74***	2752.24***	2080.54***	2083.93**	−728.45	3207.86***	910.11	863.04	11.03
1979	5023.89***	2265.13**	1545.18	−1791.95*	2355.78	5142.31***	1424.96	−1095.09	8.67
1984	4363.77***	2853.67**	2427.24**	1755.90	4660.95**	1496.13***	1325.71	3193.53**	3.81
1985	4902.50***	3564.22***	4090.04***	1886.09	6585.37***	2791.37**	304.54	2217.08	5.66

Notes: *** Significant at the 1 percent level

** Significant at the 5 percent level

* Significant at the 10 percent level

numbers in the sample. Significant differences for the female apprentices only show up in the later years.

The union differentials are significant but smaller for the females than for the males. Presumably, this reflects occupational differences between the two groups. However, in 1985 the apprentice differential for the females is of the same magnitude as it is for the males and, on a relative basis, larger. The minority coefficient is generally negative but nonsignificant for the males. However, for the females the minority coefficient is generally positive and, in the later years, highly significant. This is probably reflective of entry into certain occupations and supports the idea of placing females in nontraditional occupations, particularly minority females.

The obvious question is what accounts for the observed differences in earnings for the apprentices? One answer is provided by labor force participation in the early years. The early labor force participation rates of the apprentices were generally higher. This stands to reason since much of the apprentice's training is provided on the job rather than in the classroom. Table 4 indicates the number of weeks worked from June of 1972 through October 1979. The results are regression-adjusted using the same specification as in the previous equations. Between the spring of 1972 and the fall of 1979, male apprentices worked 304 weeks out of a possible 338 weeks. This compares to an average of 284 weeks among the comparisons. The difference is 15 weeks or slightly more than one-quarter in a year in a six-and-one-half-year period. The average number of weeks worked among the females is lower, but the net difference is slightly larger. The lack of significance is due to the smaller number of (unweighted) cases.

TABLE 4

Average Number of Weeks Worked 1972 - 1979

	Apprentice	Comparison	Regression Adjusted Difference
Male	303.8	283.5	14.6***
Female	241.0	207.7	15.6

By 1986, the proportions of apprentices and comparisons in various labor market statuses had roughly equalized, as had hours worked per week among those who worked. Separate wage equations were estimated for males and females who worked in the first week in

February 1986. The results are presented in Table 5. Among the males, the wage differential for the apprentices is $2.24 per hour. The differential for union members is $1.59 per hour. Nonwhite males received a wage that was on average $1.20 lower than that of whites.

TABLE 5
Wage on the Most Recent Job of Those Working, February 1986
(Cell Weighted Wage Regressions)

	Males	Females
Intercept	$9.61***	$5.75***
Race - Other	−$1.20**	−$0.30
Apprentice	$2.24***	$1.11***
HSPGM - Academic	$0.03	$2.47
HSPGM - Vo-Tech	$0.13	$0.51
Union	$1.59***	$1.17***
SES - Low	−$1.25**	−$0.38
SES - High	−$0.17	$0.99**
R Square	0.12	0.14
F	11.35	10.37

Among the females, the differential for apprentices is roughly half that of the males ($1.11 per hour) but quite significant, both absolutely and statistically. Similarly, the union differential is smaller but still significant. Among the females, the differential for nonwhites is considerably smaller than among the males and it is nonsignificant. These results again support the concept of nontraditional jobs for females, particularly nonwhite females.

Conclusions

The groups selected for the analysis—the apprentices and the comparison group—are quite comparable along a number of dimensions. Account was taken of the differential effects of union membership. The usual concern with this type of analysis is selectivity bias. The basis of selectivity bias is that there are unaccounted for differences in the characteristics of the treatment and control groups (background, education, experience, ability, and motivation). The first response to the issue of selectivity is that the analysis was based on those who reported participating in an apprenticeship program and not limited to those who completed training. Second, all background variables listed above, except motivation, were included in the matching or regression specifications. Third, it is not difficult to argue that apprenticeship programs have historically been selective, although not necessarily along lines that people normally have in mind when discussing selectivity bias.

The implicit question underlying this analysis is whether the concept of apprenticeship could profitably be expanded. There are many more people who are motivated to participate in apprenticeship than do participate. The magnitude of the returns to participation in an apprenticeship program suggest that economic rent is being earned by those that are selected to participate in apprenticeship programs. In fact, a cost-benefit analysis could not be performed because the early earnings differentials of the apprentices were positive and the education costs were slightly higher for the comparison group.

A corollary to the conclusions that emanate from this study is the desirability of including females, and particularly minority females, in any expansion of the apprenticeship concept. The percentage differentials for females, as well as the positive coefficients on the minority female variable for even getting into the type of occupations that were covered in this study, provide at least indirect support for this position.

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Endnotes

[1] Ray Marshall, Robert W. Glover and William S. Franklin, *Training and Entry into Union Construction*, Manpower R & D Monograph No. 39, U.S. Department of Labor, Manpower Administration, 1975. Stephen N. Hills, "How Craftsmen Learn Their Skills: a Longitudinal Analysis," *Job Training for Youth: The Contribution of the U.S. Employment Development System*, National Center for Research in Vocational Education, The Ohio State University, Columbus, Ohio.

[2] For a discussion of the sample and retention rates, see *National Longitudinal Study: Data File Users Manual*, National Center for Education Statistics, Vol. 1, June 1981, Chap. 1.

The Role of the Private Sector in Training

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As U.S. firms continue to face change due to increasing international competition, deregulation, technological innovation, and the demographic composition of the work force, they are being challenged to examine the skill formation process of their work force in order to increase productivity and remain competitive. In addition, as the service sector continues to grow, there is increasing need for "knowledge workers" in professional and technical occupations. Traditional educational institutions have not always been able to deliver programs for these kinds of workers, especially in those industries characterized by rapid technological change. These highly skilled technical jobs are forecasted to grow by 38 percent (U.S. Department of Labor, 1987) by the year 2000 in the U.S., while the majority of new workers will be minorities with the highest high school dropout rates. Therefore, companies will find themselves required to develop costly internal training programs in order to remain competitive.

Productivity growth in the United States in the 1970s and 1980s has lagged behind productivity growth in countries such as Japan, West Germany, Sweden, Italy, and the United Kingdom. Part of the reason why we are in this productivity crisis is due in part to our past successes. By defining jobs narrowly and making each job easy to learn, many firms obtained flexibility in the workplace through the interchangeability of workers with limited skills and experience rather than training workers to become multiskilled. However, the countries that are experiencing rapid growth in productivity today have typically followed an alternative model in which firms provide both general and firm-specific skills to their workers. This creates a new type of flexibility in the workplace which is more compatible with rapid technological change and new production techniques such as "just-in-time." Broader skills training for all workers reduces the need

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for supervisors and allows the day-to-day management of the firm to be performed by workers rather than supervisors. This reduces the hierarchical structure of a typical firm dramatically. In addition, the investment in workers' training is done within the context of an overall human resource management strategy that links selection, training, compensation, performance appraisal, and employment security.

This paper summarizes the findings of a longer survey (Lynch, 1989b) on the role of the private sector in the skill development of workers in the U.S. In addition to discussing the current role of the private sector in training, the paper will also describe the pattern of training programs provided by the private sector in other countries.

Who Needs Training?

There are four primary types of workers who need training. These include new entrants into the labor force, permanently displaced workers, employed workers, and long-term unemployed workers. New entrants into the labor force are made up of three subgroups, each with varying stocks of skill and new skills needs. These groups are composed of young people entering the work force for the first time, reentrants (e.g. women) into the labor force who may have worked in the past but have been out of the labor force for a period of time, and immigrant workers who come with a variety of skill levels, work experience, and proficiency in English.

The second type, permanently displaced workers, may have been displaced as a result of technological change in their industry or occupation or to changes in demand due to increased competition or deregulation. The third type of workers are those who are employed but who need training for promotions, for maintenance of already acquired skills, or for new jobs due to redeployment within the firm. The final category of workers with training needs are the long-term unemployed. Obviously, the range of company and government training programs that need to be provided to these four types of workers varies substantially.

Company training policies have focused primarily on developing formal training programs both within the firm and off-site for young workers, reentrants, those who are being promoted, those needing skills maintenance, and those who are being redeployed. Firms also provide extensive informal training to new workers, but typically with little knowledge of how much is being done, who is receiving it, who is providing it, how much time it takes, how much it costs, and the returns to both their formal and informal training programs. Most of the firm-provided training in the U.S. is quite specific to the particular needs of the firm or work site. More general training is left to what workers acquire on their own in the education system before they enter the workplace, or to training they receive from schools (community colleges or night schools), or proprietary institutions, such as vocational and technical institutions, after they have left school and begun to work.

Who Receives Training?

There has been relatively little empirical work on the impact of private sector training on the careers of workers compared with the numerous studies on the impact of government training programs. The few studies that have been done have used data from surveys of individual workers and company-based surveys. Lillard and Tan (1986) using data from the Current Population Survey, the Panel Study of Income Dynamics and the older cohorts of the National Longitudinal Survey, NLS, and Lynch (1989a) using data from the NLS youth cohort find that: while there is not a significant difference in the probability of males and females receiving any type of training, males are more likely to receive on-the-job training and females off-the-job training; nonwhites are less likely to receive on-the-job training than whites, holding all other characteristics constant; the likelihood of receiving company-provided training drops when there is high unemployment; not completing high school significantly lowers the probability of receiving training; company-provided training is not very portable from employer to employer for young workers; being in a union significantly raises the probability of receiving on-the-job training; managers and professional and technical employees are most likely to receive company-provided training; and rapid technological change in the industry of employment increases the probability of receiving in-house company training programs.

While there have been few representative samples of firms with regard to their training policies, Bartel (1989), Barron et al. (1987) and Bishop (1988) have found, using company based data, similar findings to those obtained with individual-based data. In addition, they have determined that: large firms are more likely to provide training than small firms; formal training programs are just one part of a well-developed internal labor market; and employers appear to be paying for a portion of general training costs in the U.S., but those firms with higher turnover rates lower the amount of general training provided.

The rates of return to training on wages are quite substantial. For example, Lynch (1989a) found that the wages of young workers with training rose 11 percent per year whereas an additional year of tenure on the job without any training only raised wages by 4 percent. Mincer (1989) found similar rates for young workers who received training but finds that older workers who received training received only a 3.6 percent increase in their wages.

International Comparisons

There are some distinct differences in the training policies and training institutions in countries such as West Germany, Sweden, Great Britain, and Japan from those in the United States. For example, the West German system of vocational training schemes, or its "dual system," is often cited as one of the primary forces behind its high productivity growth (see Disney [1989] and Prais and Wagner [1983] for reviews of the West German system). The West German system trains individuals in specific skills, but perhaps more importantly, it teaches young workers that they will have to learn many new skills over their careers. Training in West Germany, however, is not just restricted to the apprenticeship scheme for school leavers. There are many other types of training programs which the government has created to assist adult workers in retraining. These include a voucher system for training and wage subsidies to firms providing on-the-job training. Adults may enter a certified training course where the training institute is reimbursed by the government for all of the costs of training. The individual may also receive a subsistence allowance which is earnings-related in the form of a grant or loan. In addition, the government supports individual firms providing training through a wage subsidy which is paid to the firm.

In Sweden, training is just one component of a very broad economic policy to promote full employment. Since the early 1980s, there has been an expansion of resources devoted to providing in-house training programs to prevent job losses (see Standing [1988] for a review of the Swedish model of training). In addition, there have been subsidies given to firms who provide training for men or women in occupations that are over-represented by one sex or the other (Sweden has greater occupational segregation than the U.S. even though the female/male wage differential is around 90 percent). Perhaps the most innovative and controversial policy was the passage in 1984 of legislation creating "Renewal Funds" whereby large establishments must put 10 percent of their net profits into a fund for research and training. Rather than raising taxes and using the revenue to provide government training programs, the government has instead required firms to set aside a minimum designated explicitly for training. The approach, therefore, in Sweden is to encourage firms to regard investments in training the same way that they regard investments in research and development.

The current government in Great Britain has recently proposed dramatic reforms to promote employment growth into the 1990s (U.K. Department of Employment, 1988) that focus on the importance of private sector training. Noting that seven out of 10 of the employed workers in the year 2000 in Great Britain are already employed and that most of these workers have left school at the minimum age of 16 and have not acquired any qualifications since then, the government has established Training and Enterprise Councils (TECs). These councils will plan and deliver training programs at the local level. Specifically, they will assess the skill needs of their local labor market and identify prospects of expanded job growth and the availability of appropriate training programs in the local area. They will then manage training programs for young people, the unemployed, and employed adults requiring new knowledge and technical retraining. There will also be additional support for small firms. At least two-thirds of the TEC members will be top management employers and the remaining members will be senior figures from local education, training and economic development agencies, and trade unions who support the aims of the council. There is, however, no mandatory role for any group other than the employers. This differs then from the German system where there is a mandatory role for groups other than employers, especially the trade unions. In fact, the British government states that it hopes to "place 'ownership' of the training and enterprise system where it belongs—with the employer" (U.K. Department of Employment, 1988, p. 40). With this objective of privatization of training in mind, the British government in October 1989 "privatized" its Skills Training Agency. This agency had trained adults in craft skills and provided training for employed people through contracts with employers. The agency will now become like our for-profit proprietary schools. The British government's role in training will become more focused on assisting in the establishment of recognized standards of qualifications across occupations and on training the unemployed.

The basic educational system in Japan focuses on providing a high level of very general skills to its graduates (Sako and Dore, 1988). Therefore, more firm-specific skills must be taught at the firm level. Most of that instruction is done by the supervisor who has the responsibility of teaching and motivating subordinates. Some firms even measure a group's performance by what percentage of the workers can do multiple tasks. Interestingly, most off-the-job training in Japan takes place through correspondence courses. As in Germany, skills testing is an important component of training. There are testing centers in every prefect in Japan. Under Japan's Vocational Training Law, prefect governors can authorize training programs developed by employers, unions, and employer associations. Local and national governments are also required under this law to provide financial assistance to employers and employees participating in in-house training. These take the form of traineeship loans, financial assistance to firms with less than 300 employees, incentive grants for paid educational leave, and professional advisory and institutional services (Inoue, 1985). As in the U.S., most training is done by large firms, but smaller firms are more likely, in Japan, to try to pool their resources than in the U.S.

Policy Issues for Private Sector Training in the U.S.

As U.S. firms reexamine the way in which they train and retrain their workers, there are a variety of issues and challenges they will face. The old model of mass production which generated narrow job definitions and a reliance on informal training of firm-specific skills is not an effective structure for new production techniques, such as just-in-time, which require multiskilled workers. In addition, as the service sector continues to grow, there is increasing need for "knowledge workers" in professional and technical occupations. If new entrants into the labor force or older workers with limited general skills do not have the qualifications for the new technical jobs, firms will have to decide whether to train these workers or hire qualified workers outside the firm (if they are available). This is a difficult decision because unlike Japanese firms where "lifetime employment" leads to low labor turnover, U.S. firms run the risk of investing heavily in workers and then losing them to competitors. However, if the skills-gap is not addressed, U.S. firms will continue to have low productivity growth.

Until now, U.S. firms, especially those in manufacturing, have relied on an informal system of training workers. Workers learned "on-the-job." This system of training had an advantage of providing great flexibility in the sense that workers learned the necessary skills appropriate for their particular job and plant location. However, workers in the growing technical and professional occupations are not going to be successfully trained in this informal system. Unfortunately, there are few training centers prepared to train these new technical and professional workers. Therefore, many firms, especially larger firms, have chosen to invest in the training of workers in-house. But often these companies have difficulty in justifying or evaluating the various training programs they offer. A large part of this is due to the difficulty of measuring the costs and benefits of various training programs. For example, do the costs of training include just the direct costs of providing teachers, materials, and tuition to run a course, or do they also include indirect costs such as lower productivity and wages paid during training? How does a company measure the costs of informal training? Often companies will develop in-house programs with the assistance of outside training vendors. Typically, the vendors are asked to evaluate the effectiveness of their training course. Apart from the moral hazard problem associated with having the vendors evaluate their own courses, the evaluation criteria often focus on how "happy" the participants were with the course rather than on actual measures of post training performance.

As firms provide more training programs to make their workers multiskilled, it will also become necessary for them to examine how they compensate their workers. If there is no monetary incentive for workers to acquire additional skills, firms may find that voluntary training programs are undersubscribed. One way of dealing with this is to introduce more profit sharing or pay-for-knowledge compensation schemes.

Smaller companies have limited resources to provide training, but at the same time often have the greatest training need for multiskilled workers. Most of the employment growth in the U.S. in the 1980s and 1990s has been, and will continue to be, in small businesses. One option for these smaller firms is for employers in the same geographical area or industry to identify a set of common skills they need that workers in the local area do not have and then pool their resources to set up a program to provide these skills. Employers in Europe have had much more experience than U.S. employers in working in confederations to develop these kinds of programs.

Another option that has been proposed in the U.S. to assist firms that wish to train their workers but who do not have the resources to do this, is to give various tax breaks or subsidies to firms that train. While this may address the problem of how to encourage firms to provide more general training when labor mobility is high, there are some limitations with this type of policy. For example, should firms that receive subsidies be monitored to make sure that they are using the money for training they would not have otherwise provided? Are subsidies alone sufficient to help smaller firms? Would expansionary macroeconomic policies be more effective in raising the skill levels of workers?

There appears to be a need at the state and/or national level for greater coordination of training efforts by firms; local, state, and federal governments; unions; and schools and other training institutions in the United States. While the productivity crisis in the U.S. is not only a function of the skill formation process, it is a major component of our current difficulties. As shown in the previous section of this paper, our major economic competitors have developed comprehensive plans to train their workers so that they will be able to respond to the demands associated with new technologies and increasing international competition. As Europe moves towards greater coordination in 1992 it has been proposed in various European Communities Commission documents that a major part of the 'Social Dimension' of 1992 will be to expand training programs. The stated reason behind this is that "the process of introducing new technologies would be economically more viable and socially more acceptable if accompanied by effective training and greater motivation for both workers and managerial staff" (Venturini, 1988, p. 95). The U.S. will be challenged to do the same in the area of skill formation if it hopes to be competitive.

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DISCUSSION

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I will discuss the papers from a basic training framework. This framework highlights two distinct aspects of training which are for the most part ignored; needs analysis and evaluation. Needs analysis requires an analysis of the job (task analysis), person (present skill level), and organization (reward systems, relationships, etc.). Evaluation should be conducted using Kirkpatrick's (1967) four levels of evaluation (reaction, learning, behavior, and results) as well as the utility or value of such training.

Lisa Lynch divides her paper into a number of sections. In the section "Who Needs Training?" she identifies a number of groups to be considered in terms of training. This emphasizes the importance of "needs analysis." Assessment of skill level has a great deal to do with how to go about designing training. Note that Blanchard, using needs analysis, identified a great deal of difference between trainees. Without this information, training success would have been doubtful.

In the "Who Receives Training?" section Lynch notes that males and females differ in the type of training they receive (on-the-job vs. off-the-job). I'm not sure of the implications of this, but generally both types have problems. On-the-job training is often poorly done for a number of reasons (no formal process, trainer still has pressure for production, etc.), and off-the-job training does not easily transfer to the job. The best approach, therefore, may be combining the two, as suggested by the Cook and Cairnes paper.

Lynch notes that the ROI for trained individuals is higher than for those not trained. It may be because better performers are given the opportunity to be trained and it is the performance, not training, which contributes to the higher wages.

She then presents information on what other countries are doing, and a common theme seems to be some government involvement; a standardized evaluation system (at the "learning" level); and union

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involvement. It is useful to note that there are parts of such structures in the United States. The UAW/Ford, UAW/GM, CWA/AT&T for example have set aside money for training. A number of local government-funded committees (e.g., Ohio and Michigan) composed of government officials, union leaders, and managers have been set up to improve the image of their state. These structures should consider incorporating skills assessment and training into their mandate.

But this is not enough. It is difficult to get top management committed to training because they do not see its value. They have not requested evaluations, and trainers have been reluctant to provide them. To get organizations more interested in training, it must be evaluated at all levels (reaction, learning, behavior and results, as well as utility). There has been limited work on training evaluation using Kirkpatrick's (1967) framework. Also Cascio (1982) has provided a beginning in the area of utility. We must encourage such evaluation. Hopefully, someone has proposed, or will propose, a research project to evaluate the training at GM, Ford, and AT&T. The only way to obtain and maintain such efforts is to demonstrate their worth.

As apprenticeships provide a combination of on-the-job and off-the-job training, Bob Cook and Lynn Cairnes' paper is indeed appropriate. Also, Cook and Cairnes attempt to assess the utility of apprenticeship and note that the utility (to organizations) of apprenticeships is flexibility and adaptability; a critical issue at this time. I do, however, have a few concerns regarding the assessment of the value of apprenticeship to the individual. First, they remove individuals who are in pursuit of an advanced degree or participated in on-the-job training. This may result in the removal of real performance differences.

In the analysis (multiple regression), Cook and Cairnes use simultaneous equations. It is generally accepted that unions have a positive impact on the wages of members (Anderson, Gunderson, and Ponak; 1989), and Cook and Cairnes report a relationship between the union variable and apprenticeship. A more appropriate method would be to use a hierarchical approach to partial out the variance accounted for by the union. This would be accomplished by entering the union variable first, then entering the other variables as a set. It may also have been useful to examine the interaction between union and apprenticeship using the hierarchical multiplicative method proposed by Cohen and Cohen (1978). It may be, however, that after partialling out the union variable, there would be little unique variance left, and this may disappear after examining the impact of the differences in hours worked. Even as it stands, the R^2 is so small that it provides little useful information. In spite of this, I commend Bob and Lynn for doing this research and hope more will take up the challenge.

Nick Blanchard examined a single plant and conducted a needs analysis. He also evaluated training at the learning level. He did not, however, evaluate at the other levels (behavior, results, and utility). No doubt the organization did not ask, or expect, such an evaluation. I would encourage such evaluation to be an integral part of training so as to demonstrate the benefits of training in a language that managers (accountants in particular) will understand. In fact, given that the best evaluation is one that is done by someone other than the trainer, researchers are provided with opportunities to become involved in developing state-of-the-art research.

A final comment on training relates to the point Lynch made and Blanchard elaborated on. Training often fails because it is considered independent from the rest of the organizational structure. To be effective it must be considered as an organizational change process, and the organization must be examined through the "organizational analysis" part of needs analysis. The evaluation will help to assure transfer and provide an incentive to continue such training.

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XVII. NEW TECHNOLOGY AND FLEXIBILITY IN WORK: COMPARATIVE PERSPECTIVES

Industrial Relations Practices in Steel Minimills in the United States: Linking Business and Industrial Relations Strategies

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The impact of new technology on industrial relations can be seen as part of a larger debate within the U.S. industrial relations (IR) community over whether we are experiencing a fundamental transformation in our IR system (Kochan, Katz, McKersie, 1986). While there appears to be a growing amount of evidence that "something is new" in U.S. IR in the 1980s, there continues to be disagreement over the nature of the current transformation. An important part of this debate centers around the nature of the jobs being created in the current industrial restructuring. At the workplace level, this debate can be characterized by two opposing systems of IR (Table 1).

Some observers see the erosion of the New Deal IR system as leading to jobs characterized by IR policies and practices listed in the first column (Shaiken, 1984; Parker and Slaughter, 1988). In other words, in the absence of labor unions as an effective countervailing power, management is simply re-exerting its pre-Wagner Act control. Jobs are being increasingly de-skilled through technological changes

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TABLE 1

Two Systems of Workplace Industrial Relations

Industrial Relations Function	"Cost Reduction"	"Commitment Maximizing"
Organization of Work		
Job enlargement	Job tasks narrowly defined; Many job classifications; Work designed for individuals	Broadly defined jobs; Few job classifications; Work designed for teams
Job enrichment	Non-supervisory employees have very little influence over "management" issues	Blurring of hierarchical lines; link conception with execution of task
Employee Relations		
Participation	No formal mechanism for employee participation	Quality circles; Labor-management committees
Job Security	Limited job security; management handles fluctuations in demand through frequent layoffs and hirings	Explicit job security guarantees; attempts made to "buffer" employment fluctuations
Due Process	No formal policy to handle employee complaints/grievances	Formal dispute resolution procedures
Communication/ socialization	Informal; secretive	Regularly share business/economic information with employees
Staffing	Lack of internal labor markets (use of temporary employees, low skill requirements)	Internal labor markets (career paths; higher skill requirements)
Training	Limited to specific job skills learned "on-the-job"	Problem-solving, communication skills; cross training
Compensation		
Pay mix	Limited benefits	More extensive benefits
Pay increase criteria	Individual performance	Work group or company performance; skill level
Pay level criteria	External competitiveness; local labor market	Internal equity; national labor markets

and scientific management techniques. The jobs that remain are being filled more and more by a contingent work force. Management achieves flexibility, from this perspective, through its ability to hire and fire these workers "at-will" as demand for the firm's products fluctuate.

Others see the process of industrial restructuring and IR transformation as leading to jobs characterized by the IR policies and practices listed in the second column of Table 1 (Kochan, Katz, McKersie, 1986; Piore and Sable, 1984; Walton, 1985). For these observers, flexibility to respond to environmental changes is best achieved by training broadly skilled workers who are capable of doing a variety of sophisticated tasks. Because these skilled workers are valuable to the firm, management has an incentive to provide employment continuity to them by buffering employment fluctuations and providing explicit job security guarantees and other long-term benefits.

To date, this debate has tended to be framed in "either/or" terms, with proponents of one side offering counter-examples to disprove the claims of the other side. In sum, however, the evidence suggests that new technology is associated with both of these work organization and IR outcomes (Buchanan and Boddy, 1983). One reason for this indeterminacy is the flexibility available in applying the new technology to the production process. Computers, for example, can be used to enhance (speed-up) existing mass-production operations or to stand this traditional production process on its head by producing a variety of specialized products using general purpose technology (Katz and Sable, 1985). The interesting questions are: Why is the same technology applied one way to the production process in some cases and not in the others?; and What effect do these different uses of technology have on IR outcomes?

To answer these questions, some scholars have suggested the need to look beyond the physical properties of the technology to the nature of the product markets served by the firm (Sorge and Streeck, 1988; Cappelli and McKersie, 1987; Child, 1985). These product markets are said to determine the type and range of products to be produced and thus the nature of the production process, or how new technology is used.

"Business strategy" is the general term for how a firm competes in a given market (Schendel and Hofer, 1979). A standard typology of generic business strategies is the distinction between "low-cost" and "differentiation" strategies (Porter, 1980). The low-cost strategy is consistent with the mass-production model. It typically involves selling a standard product or service in large volume and focusing on cost reductions through tight cost control, standardized procedures, and intense supervision of labor. In contrast, a differentiation strategy is more analogous to "flexible specialization" (Piore and Sable, 1984). It involves producing products or services perceived as unique along some dimension valued by customers. Differentiators thus typically produce more specialized products in smaller batches and concentrate on gearing production and organizational resources to meet changing markets or customer demands.

In this paper, I examine the hypothesis that variation in the impact of new technology on IR policies and practices is related to the firm's choice of business strategy. In particular, I hypothesize that a low-cost business strategy will be associated with a "cost-reduction" IR strategy, while firms which have a differentiation business strategy will tend to have a "commitment-maximizing" IR strategy as described in Table 1.

Evidence from U.S. Steel Minimills

To examine this hypothesis, I look at IR and business strategies in U.S. steel minimills. Minimills represent a relatively new configuration of technology for steel producing which began widespread use in the 1960s (Barnett and Crandall, 1986). In contrast to the integrated steelmaking process used by the larger carbon steel producers and some of the larger specialty steel makers, minimills begin with steel scrap. The scrap is melted in electric furnaces, continually cast, and rolled into a variety of mostly long, bar-shape products. The minimill sector of the U.S. steel industry currently consists of about 54 steel-producing plants spread throughout the country. These plants employ an average of about 350 employees. About 60 percent of the mills are nonunion.

Minimill Workplace Industrial Relations Practices

To determine IR practices in minimills, surveys were sent to top IR (personnel) managers at 54 mills.[1] The survey contained questions on a variety of workplace-level IR policies and practices including job design, work organization, communication, job security, staffing, training, and compensation. Thirty of the mills (54 percent) returned the completed surveys.

The data revealed a tremendous amount of variation in the types of practices used in steel minimills. For example, in some mills none of the production workers performed maintenance or craft functions. In others, all production workers routinely performed maintenance work. In some mills, nonsupervisory employees did not participate in decisions regarding investment, work flow, and product development. Other mills reported a high level of employee participation in all of these decisions. The number of times employees received information about the economic and business condition of the mill ranged from 0 to 26 times per year (mean = 7.54; SD = 6.39). The overall skill level, measured by the percent of maintenance/craft workers to the total production work force, ranged from 15 percent to 43 percent (mean = 25.55; SD = 7.19). The average hourly compensation level for production and maintenance workers ranged from $11.93/hr to $25.50/hr (mean = 19.67; SD = 3.36).

Using cluster analysis, it was found that the variation across the individual IR practices formed distinct patterns that could be characterized by the two IR systems or strategies presented in Table 1. In other words, mills which had narrowly defined jobs also tended to have little employee involvement, did not provide general skills training, hired lower-skilled employees, and paid relatively low wages. The opposite was true for a second group of mills which scored relatively high on all of these variables. The stability of employment, as measured by the turnover rate, also differed significantly between the two groups of mills. The turnover rate for the cost reducers was approximately five times higher than that of the commitment maximizers (10 versus 2 percent).

Somewhat surprisingly, this classification did not represent simply the distinction between union and nonunion mills. Of the 15 unionized mills in my sample, 6 were classified as following a cost reduction-type strategy and 9 were classified as following a commitment maximizing-type strategy.

Minimill Business Strategies

Data were also collected on business strategies in minimills through a survey sent to the top line manager at each mill. Forty completed surveys were returned (74 percent response rate). The data from the survey included responses by managers on the relative importance of various characteristics of a low-cost and differentiation business strategy, as well as the actual number of types, sizes, and grades of steel products produced (product scope) and the range and type of customers served by the mill (market scope).

As with the IR practices, there was a large amount of variation across mills on each of these variables, especially product scope. For example, the total number of sizes of steel products produced in minimills in 1987/88 ranged from 8 to 600 (mean = 127.06; SD = 115.45). The total number of steel grades produced (a measure of the quality and value of the product) ranged from 2 to 500 (mean = 61.09; SD = 95.50). The number of different categories of products produced by the mill (e.g., carbon steel bars, wire rod, light structurals, beams, etc.) ranged from one to five (mean = 2.37;

SD = 1.40). Clearly, then, the basic minimill technology was being applied in very different ways in these mills.

Again, cluster analysis revealed distinct patterns to this variation. The four clusters that emerged can be identified as one low-cost business strategy, and three variations of the differentiation business strategy. The 15 mills identified as low-cost producers emphasize selling basic, low-value steel products at the lowest cost. They tend to concentrate on one or two simple product types (e.g., reenforcing bars, angles), and produce them in a few standard sizes and grades. They tend to sell their products on the open market in a large regional market area.

The remainder of the mills appear to be competing on some basis other than solely low cost (i.e., some form of differentiation). Versatile differentiators emphasize producing a variety of minimill products and focus on satisfying and gaining a good reputation with local customers. They produce a relatively wide range of products in a number of different shapes or sizes. They produce for both open market and contract customers.

In contrast, specialized differentiators appear to emphasize both low cost and differentiation. This strategy is distinguished from the low-cost strategy because it involves producing relatively high-value, high-quality products in a large number of grades. By specializing in high-value products, these mills achieve economies of scale relative to other minimill producers which enable them to achieve a price advantage as well. The final minimill business strategy, customized differentiators, involves providing customized steel products in a wide variety of shapes and sizes to a variety of specific contract customers. Low-cost, in this case, is not nearly as important as satisfying particular customer needs.

The three differentiation business strategies differ from the low-cost strategy in that they all involve producing a variety of products in the same facility. Their business strategy, in effect, requires that they utilize the flexibility of the minimill technology to respond to particular customer or market needs.

Association Between Business Strategies and IR Strategies in Minimills

The degree of variation and diversity in the production process associated with the different business strategies in minimills appears to be an important determinant of the type of IR strategy used in the mill. The association between business strategy and IR strategy is shown in the two-by-two matrix in Table 2. As can be seen, the majority of the mills (69 percent) lie along the main diagonal of this matrix and thus have the hypothesized fit between their business and IR strategies. Ninety percent of the mills following a low-cost business strategy have a cost reduction IR strategy. Sixty percent of the mills following a differentiation business strategy have a commitment-maximizing IR strategy. The statistically significant chi-square statistic (6.00; $p < .025$) supports the hypothesis that there is a relationship between these two variables.

TABLE 2

Association Between Minimill Business Strategies and Industrial Relations Strategies (N = 29)

		Business Strategy	
		Low Cost	Differen-tiation
IR Strategy	Cost Reducing	8 (89%)	8 (40%)
	Commitment Maximizing	1 (11%)	12 (60%)

Chi-squared test of independence between variables = 5.998; $p < .025$

It should be emphasized that these findings do not imply a unidirectional, causal relationship between business strategy and IR strategy. In fact, case study descriptions suggest that in some cases (particularly when the mill is unionized) IR factors may influence the type of business strategy chosen by the mill (Arthur, 1990: Chapter 7). More research is needed to flesh out the complex interrelationship between business strategy and IR strategy choices over time.

Conclusions and Implications

Minimills illustrate the flexibility available to employers in applying new technology. The choice of how the technology is applied to the production process appears to be strongly related to the nature of the product market or the business strategy chosen by mill. Business strategy thus appears to have profound implications for how work is structured and the types of IR policies and practices which exist in these mills. The evidence from minimills provides strong support for the argument that to understand the impact of new technology on IR, we must look beyond the characteristics of the technology itself to the ways in which this production technology is used to compete in product markets.

This relationship between business strategy and IR also has important implications for labor unions. It underscores labor's stake in the business decisions of the firm. Management decisions about what to produce, how to produce it, and how and to whom to sell it, affect not only the financial bottom line of the firm, but also the way employees experience their daily work lives. Unions in the steel industry and elsewhere who have bargained for influence over these decisions can use this influence to encourage a type of business strategy which fits with their memberships' interest in increased shop floor discretion and control, and in stable, well-paying work.

Acknowledgments

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Endnotes

[1] For a complete description of the survey instruments, data, and analyses referred to in this paper, see Arthur, 1990.

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XVIII. CURRENT DEVELOPMENTS AND FUTURE TRENDS IN LABOR EDUCATION

The Labor Education/Industrial Relations Nexus: Challenges and Opportunities

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The historically structural connection between labor education programs and industrial relations programs within universities might be less compelling today were these programs just being established. However, there is a connection, by charter in many cases, in the sense that industrial relations centers and labor education programs were institutionally linked within universities at their genesis (Barbash, 1955). The programs are also connected by practice in the sense that the fields of industrial relations and labor education have developed in parallel fashions during a time in which union-management relations have become an important focus of educational institutions in the United States. Certainly the parallel demand for professionals and professional educations by unions and managements has not diminished. Individual faculties and universities tend to be involved not in one or the other but in both types of programs.

The purpose of this paper is to explore, in an abbreviated fashion, the connections between the two broad fields. I shall do this by first exploring the obvious differences between those two types of educational ventures, then examining the inherent conflicts between the two, and finally discussing the opportunities for productive interaction between labor education and industrial relations.[1]

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Labor education and industrial relations are connected by their logical interaction and the potential for each to feed from, and inform, the other. This occurs often despite the fact that labor education and industrial relations programs are different in educational content and methodology. Industrial relations programs are degree-based. Labor education programs exist for short-term, instrumental educational goals to provide union leaders with the tools of the trade.

These programs exist with two different objectives, often at odds with one another, occasionally in concert. Industrial relations programs are designed to, and have, natural institutional leanings toward peace, cooperation, industrial efficiency, and other neutralist goals (Dwyer, 1977). Labor education's objective is to provide the union side of the industrial relations system with the tools of advocacy that will allow it to further their members' interests. Often, the tools of advocacy are tools which allow conflict to work for unions and for workers and are thus at odds with industrial relations programs.

Labor education and industrial relations programs differ in their faculties. Industrial relations faculties are not unlike other disciplinary based programs within universities in which peer-judged, scholarly research is the single most important determinant of demonstrated competence in the field. Labor educators tend to be more a collective lot of some academic, some with practical-based experience, and most with a mix of the two. Another way in which the fields differ substantively is in their students and the reasons for those students to be in the classroom. Labor education students have direct goals in attending any single educational class within a labor education program. The payoff expected from education is short-term. Industrial relations students, in general, are seeking degrees, which by their very nature, demand a long-term and less instrumental payoff. Many students, in fact, may not even go into the field of labor relations. They're studying the field to obtain a basic grounding in preparation for other work.

Despite the fundamental differences between programs, it is clearly desirable for labor education and industrial relations to coexist and even thrive side by side. Differences between the programs can be mitigated and minimized in importance by the fact that labor education and industrial relations are both directed at studying and learning the same subject matter.

Discomforts and Conflicts

Curriculum Focus

Labor educators, by the very nature of the students they serve and the goals of their programs, emphasize unionized labor-management relations to the detriment of all other employment relationships; thus, collective bargaining, Taft-Hartley law, and contract administration all play a central role in the minds of the educators and the work they perform. This continues despite the precipitous decline of trade unionism in many of the arenas in which labor educators work. A labor educator at Cornell University, however, is able to survey the landscape in the state of New York and conclude correctly that not much has changed during the 1970s and 1980s. The decline in trade unionism in the state of New York has not been as precipitous as it has been nationally, and thus, unionized labor-management relationships continue to occupy center stage in the curriculum in which these labor educators practice.

This situation can be contrasted with the traditional industrial relations subject matter. Collective bargaining often, even in industrial relations centers, occupies only one of a triad of foci of these programs. Collective bargaining often occupies a stage in which it is a partner with concurrent emphases on human resource management, public policy, and organizational behavior. When this triad is coupled with the decline in trade unionism and collective bargaining in the United States over the last 20 years, industrial relations programs increase their emphasis on the other parts of the triad; human resource management and whatever else was originally emphasized. However, an industrial relations educator at the same university who surveys the national, and perhaps even the international, scope of events, might quite correctly conclude that collective bargaining, trade unionism, and labor relations are deserving of less attention in an industrial relations curriculum today. Thus, he could conclude that industrial relations curriculums should be moving more in the direction of serving the needs of human resource managers, policy makers, and others less interested in collective bargaining. There clearly is a potential for further conflict in resource allocation between labor education and industrial relations programs. Those who teach in industrial relations programs and their choice of emphasis will provide the focus of industrial relations programs over the next decade. Labor education subject matter will occupy more and more of a minority position. If the labor movement continues its decline, the conflict between labor education and industrial relations will only become more intense.

Educational Methodology and Faculty

A second primary discomfort is educational methodology. Labor educators use the tools of adult education to bring to students knowledge and information which will help to broaden a naturally narrow base of experience and to provide a context for that experience. Thus, labor education efforts are methodologically varied both in the approach taken in the classroom and in a notable rigidity in teaching various subjects. Within a structured industrial relations curriculum, students generally have little experience. Theory substitutes for experience in order to allow students to be able to apply a body of research and information to situations they may find themselves in at a later time. Thus, the faculty in industrial relations programs tend to take an approach to a subject of collective bargaining, for example, which is not experiential-based learning but rather theory-based learning. Students in the two programs come away with different things; a context in labor education and a method of analysis in industrial relations.

Discomfort between the two groups of faculty perhaps becomes most apparent over who is qualified to teach. Labor educators seek those who have the widest possible base of experience and rely less on academic credentials. Industrial relations scholars are driven first by credentials and then research within a field. This conflict at its most basic level can be seen in the choice and belief about who is qualified to teach a course in collective bargaining, common to both curriculums. The labor educator would look for someone with the broadest possible base of experience, whereas the industrial relations scholar would focus much more narrowly. Given structural connections between faculties, this conflict often occurs in faculty choice and provides a barrier between programs.

Advocacy

The third major source of conflict is over the question of advocacy. Industrial relations curriculums are constructed as neutralist. The faculty members who staff them see themselves as neutral in the study and teaching of all topics related to industrial relations. Thus, their modus operandi is to attempt to give students the tools of analysis so that they can study any individual problem and reach an informed conclusion about the predicted or desired outcome. This idea is applied from the level of macro labor policy to any individual collective bargaining dispute, or at its extreme, the solution to a single problem between an employee and supervisor in the workplace. The labor educator, on the other hand, works with unions and in unionized collective bargaining arrangements. He or she is often seen as an advocate by the industrial relations community because of the labor educator's role in working with unions and union leaders. This role leads labor educators, for example, to support unions in a conflict over organization rights, since organization is the stepping stone to collective bargaining. Industrial relations educators see that as a conflict in a situation in which it is seen as critical that the industrial relations community specifically not have a position and remain neutral. Thus, labor educators, due to the clients they serve and the topics they teach, are seen as advocates for collective bargaining.

The above problem further complicates and creates tensions between the industrial relations and the labor education community when one considers the tools of advocacy. Whereas the industrial relations community sees itself as providing the tools of *analysis,* it is the labor education community's function and role to provide trade unionists with the tools of *advocacy.* Thus, the labor education community is seen as further removed from neutrality and again polarized from the industrial relations community. Not only does the industrial relations community view labor education and its exclusive work with the unionized trade union movement as a form of advocacy in itself, but provision of the trade union community with the tools of advocacy is a second level of breach of neutrality.

In contrast, the labor education community views the industrial relations community as occasionally abrogating its responsibility to take positions on issues in which labor educators see their clear rights and wrongs. Thus, labor educators are regularly alienated by an overly neutral approach to problems by industrial relations scholars.

I raise these issues not to suggest irreconcilable differences, but rather to point to the fact that the roles and values inherent in them can severely limit connections between industrial relations and labor education.

The Opportunities of the Industrial Relations/ Labor Education Nexus

At its most fundamental level, the greatest potential for productive opportunities for interaction between the industrial relations community and the labor education community continues to be a feedback loop between research and practice. The loop is formed by research informing practice and practice informing research. Research on collective bargaining topics has the opportunity to inform the practice of collective bargaining and labor relations at all levels.

One prime example is the research that has been conducted over the last decade, primarily within the industrial relations community, on the decline of the American labor movement. This research has taken several tracks comparing the U.S. labor movement in an international perspective, comparing the forces that have led to growth and decline in the labor movement over long periods of time within the United States, examining the forces which come into play in predicting any individual National Labor Relation Board's certification election outcome, and finally, examining the psychology of the individual decision to vote for or against a union or to join or not join a trade union (Fiorito, 1982). Much of this research is theoretically based and mired in methodological complexities irrelevant to the labor education community. Despite that, the labor educators clearly learned from, and benefitted from, this body of research. Labor educators have been able to utilize, upon translation, this body of research and inform the trade union community. The context in which unions operate and the forces that come into play in explanation of the decline of the labor movement have all been informed by this research. Prospects of any effort to attempt to stem that decline can be helped. Thus, research has informed the union community and labor educators as unions seek to form strategies to deal with the new reality of the labor force, the shift in the composition of jobs, and management strategies, all of which have led to a decline in the labor movement. Clearly, in this area, over a period of time, the research of the industrial relations community has served to both inform and focus the efforts of the trade union community, usually with the intermediary assistance of the labor education community.

It is just as true that practice informs research, and thus the circle can be completed (Kochan, Katz, and McKersie, 1986; Verma, 1989). One of my colleagues in industrial relations is fond of saying that he selects his research topics by reading the *New York Times* and the *Wall Street Journal.* Leading edge practice can peak the interest of the researcher, create research opportunities, and once again, inform practice. A deeply ingrained value in the industrial relations scholarly community is a desire to be contemporarily relevant to the practice of collective bargaining. Thus, experiments that are ongoing in the union-management field within the day-to-day practice create research opportunities and ideas for the industrial relations community. It is sometimes now, and could be, an expanded role of the labor education community to facilitate the same translation of practice into research as they do in the research into practice.

The best current example in this area over the past decade has been the changes in collective bargaining direction that unions and managements have taken. Unions and managements have attempted to struggle with the decline of basic American industry. This decline has led many unions and managements to experiment with the reorganization of workplaces, the fundamental restructuring of the role of unions in business decisions, and an ever-widening scope of collective bargaining. These practices were underway, and labor educators were informed of them prior to the industrial relations community origin of research experiments and analysis. It is clear, then, that in this particular case, practice has informed research.

These two examples lead one to the conclusion that the greatest opportunity for the industrial relations-labor education nexus is in this circle of research and practice. Labor educators and the industrial relations community should continuously search for the kinds of connections where research can inform practice and in turn practice can inform research.

An Agenda for the Future

Labor education and industrial relations could exist side by side, each conducting their education and research without interaction with the other. It seems to me, however, that this would clearly not be beneficial to either community. There are many areas of potential interaction and contribution that labor education can make to industrial relations and vice versa. To construct that positive interaction, however, both labor education scholars and industrial relations scholars must seek to avoid all of the pitfalls involved in joint governance of the two types of programs. If labor educators and industrial relations scholars get bogged down in all that separates them, the positive interaction will likely never occur. However, if one can understand and minimize those differences, all the potential for the positive interaction is there. Therefore, I would propose that labor educators and industrial relations scholars focus on the research and practice nexus in collective bargaining and seek more areas for fruitful interaction. The challenge lies before us for the next decade and beyond, and whether the two communities will continue to focus on their difficulties or their potential remains a choice of both.

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[1] The following discussion has benefitted generally from the writings of Boyle, 1976; Gray, 1976; and Lieberthal, 1977.

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Research Activity Among Labor Educators: Results of a Survey

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Like the field of industrial relations, labor education[1] is relatively new to the academic scene, with most university and college programs having been established since World War II. The last 40 to 50 years have, consequently, been a formulative period marked by continual change as the field has grown and adapted in its relationship with the labor movement and in its role within higher education. Many aspects of the field's evolution have been examined in some detail and debated at length (Boyle, 1977; Brickner, 1976; Nash, 1978). One of the areas that has not been the subject of much attention has been the role of research activity within the labor education field.

Research has always been a part of the work of labor education professionals (Rogin and Rachlin, 1968). For example, materials development, an integral aspect of the field, requires labor educators to gather information from original and secondary sources and convert it to a form appropriate for classroom use. While most labor education faculty traditionally have engaged in this type of "applied research," they have less frequently engaged in "scholarly research" involving the creation and sharing of new knowledge through the publication of books, journal articles, etc. Recent studies have provided indirect evidence that the level of both applied and scholarly research conducted by labor educators has been rising (Bennett, 1987; Remington, 1988).

This study examines current research activity among university and college labor educators. Using data gathered in a survey of faculty employed in the field, this paper presents information concerning the extent of research activity among labor education professionals, the

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manner in which the amount of time devoted to research has changed in recent years, the focus of these research efforts, and changes in the training and background of labor educators.

Data Collection

Data for this study were collected through a survey of faculty at University and College Labor Education Association (UCLEA)-affiliated programs. A questionnaire focusing on research activity was mailed to 269 labor education faculty members at 47 institutions listed in the 1987-88 UCLEA directory. One hundred fifty-eight substantially complete questionnaires were returned for a response rate of 59 percent.

The questionnaire utilized in this study included 35 items focusing on the extent of research activity, the nature of research conducted, the methodologies employed, outlets for research results, and constraints and limitations hindering research efforts. Items focusing on the training and background of labor educators were also included in the survey.

Results

Extent of Research Activity

The results suggest that research, broadly defined, is an increasing part of the professional lives of the vast majority of labor education faculty. In fact, 88 percent of those responding to the survey reported that they currently engage in, or in the past have engaged in, research activities. Fifty-two percent of the respondents indicated that research is required as part of their normal job responsibilities.

The results of the survey also suggest that the demand for research placed on labor educators by their academic institutions has grown in recent years. Forty-two percent of labor education faculty members required to engage in research activity reported that the demand for research has increased greatly during the last 10 years and a total of 82 percent of these respondents felt an increase in demand of some degree.

In terms of the source of this increased demand for research, more than two-thirds of the respondents felt that this pressure emanated from top college or university administration. Only 15 percent identified their labor education program or department as the principle source of the increased demand.

These results suggest that research has been a part of the work of labor education professionals in the past and is, increasingly, becoming an even more important aspect of the normal job responsibilities of many in the field. The results also suggest that this is a phenomenon largely being imposed from outside the profession. While this situation raises some potentially important questions about the future of the field, it should be noted that 82 percent of those responding to the survey agree or strongly agree that labor educators "should engage in research as part of their normal job responsibility." This suggests that while the imperative to do research may emanate from outside the field, it is an imperative with which many labor education faculty are apparently comfortable.

The increasing demands on labor educators to engage in research has had an inevitable impact on how those in the field allocate their efforts. Of those respondents required to do research as part of their normal job responsibilities, nearly 40 percent reported that the amount of time they spend engaged in research had increased over the last five years. On average, these respondents indicated that they currently spend 24 percent of their work time on research activity.

Nature of Research

What constitutes research clearly differs across academic fields and disciplines. Historically, professionals in the field of labor education have focused most of their energies on providing training programs for union leaders and members. Faculty members who coordinate and teach these kinds of programs are frequently called on to develop original materials tailored to the subject and group involved. They are also sometimes asked to engage in research whose primary purpose is to provide information of practical value to a specific labor group, the products of which may not be valued or recognized by some academic fields or disciplines. The research efforts of faculty in the field, however, are not limited to this kind of applied research. Many labor education professionals also engage in scholarly research involving the creation and sharing of new knowledge through the publication of journal articles, books, and monographs.

Because both types of research appear to have a role to play in the field, and because many labor educators engage in both approaches, research, for the purpose of this study, was defined to include both applied and scholarly research. The respective approaches were outlined in the questionnaire as follows:

Applied Research—research conducted primarily for the development of original information and material designed to be of practical use to unions or to the labor education process.

Scholarly Research—research conducted primarily for the purpose of creating and sharing new knowledge through the presentation of formal papers or publication in scholarly journals, monographs, etc.

In order to determine the extent to which labor education faculty members engage in each type of research, the survey asked respondents to estimate the percentage of their research activity that fell into each of the two categories. The range across those responding was quite wide, with 28 respondents (20.7 percent) indicating that 100 percent of their research efforts fell under the heading of applied research and only eight (6.0 percent) indicating that 100 percent of their time was spent on scholarly research. The overall mean percentages suggest that the labor educators responding to the survey spend 63 percent of their research efforts on applied research and 37 percent of their efforts on scholarly research.

Training and Background of Labor Educators

In an effort to generate additional insight into the issue of research activity, the survey questionnaire included several items focusing on the training and background of labor educators. One significant statistic involves the number of labor education faculty members having doctoral degrees. The results of this survey indicate that 39 percent of those responding hold doctorates. These results are consistent with recent research by Bennett (1987) that found 37 percent of professionals in the field possess Ph.D.s. Both of these figures are significantly higher than the 24 percent level reported by the UCLEA Committee on Salary and Benefits in 1978, indicating that the percentage of labor educators with Ph.D.s has increased in recent years (Nash, 1978).

Given the research orientation of doctoral programs, the entry of an increasing number of Ph.D.s in the field might be expected to have a positive impact on the amount of research undertaken. While proving a causal relationship is beyond the scope of this survey, the data gathered do indicate that, on average, the amount of time spent on research by those responding to the survey is greater for faculty members having doctorates (28.8 percent) than for those without (21.3 percent).

Related to the issue of degrees held is the issue of years of experience in the field. The data collected suggest that there is a significant, negative correlation ($-.21$, $p < .01$) between years employed and the percentage of time spent on research. The finding that faculty members newer to the field are more likely to spend a larger proportion of their time on research than those with more years experience could be a function of a number of factors. It would appear that this relationship might, again, be related to the entry of more Ph.D.s into the field in recent years, as well as the changing tenure requirements at many institutions having labor education programs.

Discussion and Implications

Clearly, the results of this study indicate that research, both applied and scholarly, is an increasingly significant part of the work of labor educators. The recognition by the vast majority of those responding to the survey that labor education faculty "should engage in research as part of their normal job responsibilities" suggests that many labor educators feel research can make a contribution to the goals of the field. While considerable discussion has been generated in an effort to define exactly what these goals are, the broadest definition—to serve the educational needs of unions, union members, and union leaders—might be the most appropriate (Boyle, 1976). Given this purpose, it is useful to consider ways in which the research activities of labor education professionals can meet these needs.

Applied Research

The survey results indicate that labor education faculty members devote a greater proportion of their research efforts to applied research than to scholarly research. This type of research can be of use to unions, union members, and union leaders in a number of ways. As defined in this study, applied research involves "research conducted primarily for the development of original information and material designed to be of practical use to unions or to the labor education process." The key distinctions between applied and scholarly research appear to lie in the focus of the research and the form of the product that results. Underlying these distinctions is the audience for which the final product of the research is intended.

The usefulness to the labor movement of research by labor educators would seem to be a function of the relevance of the research topic and the clarity of the findings reported. To the degree research by labor education faculty focuses on problems and issues of immediate concern to unions, union leaders, and union members, that research would seem to be consistent with the goals of the field. However, if the results of such research are reported in a way that shrouds or obfuscates the important findings, such as by emphasizing complex statistics or highly technical research methodologies, its practical value to union practitioners is diminished.

Another potentially useful research-related activity engaged in by labor educators involves the monitoring, translating, and communicating of information and findings generated by other sources. Union members and leaders very often do not have either the time or the training to allow them to keep abreast of research that might be of use to their unions. This is particularly the case with research presented in scholarly journals or at professional meetings. Identifying and translating this research into a form useful for labor education classes or for publication in union newsletters provides a potentially valuable service that labor educators can perform.

Scholarly Research

The results of the survey indicate that labor education faculty members focus a considerably smaller part of their research efforts in the area of scholarly research. Still, it appears that work of this kind can also contribute to the goals of the field. Scholarly research basically serves to create and add to an original body of knowledge that increases our understanding of a given subject. In terms of subject area, the scholarly research activities of most labor educators generally focus on issues involving unions, union members, and their relationship to employers. Labor education professionals are uniquely situated to add to the body of knowledge concerning these topics.

The day-to-day involvement of labor educators with the labor movement, and the relationships with union members and leaders that result, often provide access to information and research opportunities not available to other academic researchers. In addition, labor educators should bring increased sensitivity and insight to research in this area. Given these factors, labor education faculty can potentially sharpen the picture of the labor movement that emerges in the scholarly literature.

As suggested earlier, applied research is often highly pragmatic and practical, with obvious relevance for practitioners. The relevance of scholarly research, because of its sometimes theoretical and experimental nature, is sometimes less clear. This concern, by itself, does not necessarily mean that scholarly research cannot be of value to the labor movement.

Academic inquiry, particularly of a scholarly nature, differs from the kind of in-house research that occurs within labor organizations. Union research departments, by necessity, most often focus on narrow, day-to-day issues in the bargaining, contract administration, and political arenas. Freed, to a large degree, from the political considerations and expediency concerns experienced by most union researchers, academic researchers may be in a better position to explore new, and sometimes, controversial ideas, issues, and programs that might, eventually, have great significance to the labor movement.

Future Directions

Recent efforts by the American labor movement to examine current programs and practices and its apparent willingness to explore new directions and approaches suggest that now may be an auspicious time for labor educators to engage in research of both an applied and scholarly nature. The AFL-CIO's report, *The Changing Situation of Workers and Their Unions*, suggests a number of directions in which the labor movement should move in the years ahead (AFL-CIO, 1985). Labor education professionals may be in a good position to explore and critique these new ideas, as well as to evaluate the performance of ongoing programs and activities.

In addition, there is considerable evidence that unions are becoming more open and accessible to experts and consultants outside the labor movement who are in a position to provide technical assistance and information (Stratton and Brown, 1989). Labor education programs have long acted in consultative capacities with unions. The increased research activity of labor educators, both in the applied and scholarly areas, better equips such programs to meet the labor movement's needs in this regard.

The above discussion suggests that the research activities of labor education professionals hold potential benefits for unions. If, in fact, this is the case, these benefits can only be realized if unions are aware of this work. Presently, the opportunities for labor educators and other academic researchers to share their work with the labor movement, in a direct and systematic fashion, are limited. There are, however, several relatively new and potentially promising vehicles through which this interchange can take place.

In recent years, Cornell University and the AFL-CIO have jointly held periodic conferences which bring together research directors of national unions and university researchers engaged in work on union-related issues.[2] These conferences provide a forum for union and university researchers to share their work and discuss mutual interests. Two relatively new publications also serve to inform the labor movement, and other academics, of ongoing research on labor-related issues. *Work Place Topics*, issued periodically by the AFL-CIO, publishes summaries of academic research of relevance to unions. The *UCLEA Resource Directory* includes a listing of the current research interests of labor education professionals. Both of these publications have the potential to bring unions and academic researchers into contact with each other.

It would appear, however, that both the academic community and the labor movement need to devote more attention to increasing the opportunities for collaboration between labor educators, academics from related disciplines, and unions. One idea that might have both practical and symbolic value in this regard involves the creation of a visiting scholar-in-residence position at AFL-CIO headquarters. As outlined in a presentation to the organizing directors of AFL-CIO unions, a university researcher-in-residence would be able to assist the federation and member unions in conceptualizing and carrying out research projects and in evaluating research proposals emanating from the academic community (Fiorito, 1988). The creation of such a position would also draw attention to the potential benefits of a closer relationship between labor and the academy.

Increased collaboration could also result from closer ties between the UCLEA and other scholarly and professional organizations. Developing such a relationship with the IRRA, which draws membership from both the academic community and the labor movement, might be an appropriate first step in this direction. Joint programs at national meetings, the sharing of membership data, and the exchange of information concerning research opportunities are possible end products of such a relationship.

The results of this study indicate that labor educators are devoting an increasing amount of time and effort to research, both applied and scholarly. Whether this is a positive development will depend on the results. If such activity distracts from the basic mission of labor education by shifting attention to individual professional goals, the fears of critics who predict the "academization of labor education" will be confirmed. Alternatively, research conducted by labor educators has the potential for strengthening the quality of their own program offerings while providing unions with the technical assistance which business schools provide to management.

Endnotes

[1] The terms labor education and labor educator will be used here to describe academic programs and faculty members who engage in the education and training of union members and officers as a central part of their work.

[2] The first three joint AFL-CIO/Cornell University conferences were held in 1980, 1983, and 1987. The fourth program, titled "Conference on Changing Challenges For Unions" was held in the fall of 1989.

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New Directions: Labor Education, Labor Educators, and the U.C.L.E.A.

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Nearly 30 years ago the first chairman of the University Labor Education Association, which later became the University and College Labor Education Association (UCLEA), addressed the annual Industrial Relations Research Association (IRRA) meeting. Among his highly positive observations were: (1) that between 1946 and 1962 labor education programs at institutions of higher learning had increased from 11 to 24; (2) an increased status for directors of such programs through academic rank and tenure; (3) more course and subject matter variety; (4) higher status (i.e., acceptance) within the institution; and (5) more acceptance by the labor movement (Hoehler, 1962).

Clearly, there have been numerous changes in the years since that address. If the early 1960s were a time of eager anticipation for the nation, the labor movement, and labor education programs (continued growth and increasingly better times seemed inevitable), the 1980s have been a time of sober reflection and accelerated change due to external forces. For the labor movement, the external forces were the restructuring of the national and international economy. For labor education, the external forces were changing requirements within our academic institutions but *outside* our own profession. Nevertheless, there have been positive developments for labor education[2] and the UCLEA. Current UCLEA institutional[3] membership shows 51 programs in 29 states and the District of Columbia (UCLEA, 1989). The future holds promise of both more labor education programs and more UCLEA-affiliated institutions.

Academicization

The single internal change with the greatest and most long-lasting impact and ramifications has been what is referred to—virtually

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always in the negative sense—as the academicizaton of labor education. Nowhere is this shown more clearly than in the area of research and publication. In this view,

> a great strength of university labor education lay in its concentration on teaching students and its concomitant lack of emphasis on publishable research. Research of excellent labor educators usually was directed to producing teaching materials. Establishment of a journal in a field opens the great possibility that young, highly motivated labor educators will be expected to contribute scholarly articles to achieve promotion and tenure. Where practitioners want to express themselves in writing, a journal can fill a need in the field. It is that crucial difference between *wanting to express oneself and being expected to produce articles* that can materially affect the quality of labor education (emphasis original) (Lieberthal, 1977).

In short, publish or perish has come to labor education.

The concern was, and remains, a genuine one although even by 1977 the future path of labor education may well have been decided. It was argued that a drop in the levels of service to, and program development for, workers and unions also could be expected if labor educators, like traditional academics, were caught in the publish or perish trap. The ongoing development of new and better materials for labor education, long one of the strong points of labor education, would be lost. Such materials, often specific not only for a particular union but for a particular class as well, ultimately would yield to a more generic approach of materials used across the board because labor education research efforts would be channelled toward scholarly (publishable) research as opposed to applied (practical, classroom) research. The university reward system would provide the necessary incentives and disincentives to assure this outcome.

Recent Research

Recent research (Bennett, 1988; Remington, 1988) indicates that the increased status of faculty rank referred to by Hoehler in 1962 has been, not surprisingly, a two-edged sword. Certainly, faculty rank not only confers more status and autonomy on both the individual and the labor education program but the benefits of academic freedom as well. But with faculty appointments have come promotion and tenure requirements. With promotion and tenure requirements have come changes in hiring criteria. These new hiring criteria include emphasis upon a terminal degree, especially the Ph.D., together with demonstrated research productivity or potential. In this connection, the importance of trade union experience has diminished as a hiring criterion. It is clear that these changes are rooted in the tenure system. A major result has been a change in the backgrounds of labor educators.

In the years between Nash and Bennett, another study found first-hand union experience by new labor educators to have declined—a not surprising occurrence given the simultaneous increase of Ph.D.s into the field. Most labor education duties traditionally were considered nonacademic, i.e., program coordination; noncredit instruction; and program development, with only a small percentage requiring academic publication (Roberts and Johnson, 1982). The hiring of more and more Ph.D.s is consistent with the traditional university faculty rank and tenure system. It also alters the mix of different types of labor educators within the field. As adapted and modified by Nash from Wilensky, the typologies are: Missionary (crusader; stresses union democracy, steward system, and the rank and file; advocates social and political change and broadening the social vision of union leaders; challenges the industrial relations system; seen as "outsider" to union officials); Careerist (emphasizes immediate issues and technical training; respects values and goals of union leaders; strengthening of loyalty of union members to labor movement; a mediator between the university and the union; is well-regarded by labor leaders); and Professional Services Expert (encourages use of analytical tools and empirical data; makes greater academic demands of students; is a proponent of accredited courses of study; conforms with values of academia and desires academic status for the profession; seen as too abstract and impractical as teacher of unionists by union leaders.) (Nash, 1978).

Thus, a situation now exists which has been characterized as an intramural strain resulting from the "changing expectations of university administration and new labor education staff members that have not been reconciled with the unchanging, or more slowly changing, expectations of the incumbent labor education staff and of the client group, the labor movement," (Allen, 1989). Labor education programs at most universities live in a generally hostile environment, and labor education still suffers within most university systems of status and reward. University rhetoric aside, public service still rates a poor third behind research and resident instruction. University administrators respond to their own set of expectations and rewards grantsmanship, publications, star professors, and graduate programs (Golatz, 1977). Whether one sees academicization as a positive or negative for labor education, the ultimate administrative implications upon the profession within the academic system remain the same. Labor educators increasingly are required to be more like traditional academics and are faced with trying to perform a nontraditional academic job while operating within a traditional academic system.

New Directions

Though often decried as "bread and butter courses" (Nash and Nash, 1970), the staples of labor education continue either to be rooted directly in the collective bargaining area (e.g., steward training, collective bargaining, grievance/arbitration, labor law) or geared to developing the individual union member, officer, or representative as a more able and aware citizen (e.g., communications, politics, occupational safety, and health) (Schmidman et al., 1989). Yet, a recent study in Alabama to determine interests, desires, and needs of the union clientele found the responses to strongly answer "more of same" (Roberts, 1988). These results would not be surprising to experienced labor educators.

Nevertheless, a major criticism of labor education 20 years ago (Nash and Nash, 1970) appears to have been successfully addressed: university-based labor education programs essentially have halted the cultural lag in labor education with new directions in programming. This is not to say that the traditional has been, or should be, abandoned or even de-emphasized, but new needs are being addressed and new opportunities exploited. One of the great advantages of labor education, as opposed to traditional academic models, is that it is quick to respond to changing realities and priorities (Schmidman et al., 1989). The following are selected responses by labor education for new directions at UCLEA-affiliated institutions (*Labor Studies Forum*, 1988-1989).

Industrial health has taken on new meaning as workers and unions have struggled for ways to deal with AIDS in the workplace: Labor education programs have developed meaningful and appropriate programs dealing with awareness, understanding, privacy rights, protection, and prevention.

With computers now a commonplace item, many labor education programs have undertaken the task of initiating and educating the nation's unionized workplace into this critical area of high technology—one that affects the workplace, home, and society at large. Computer literacy can be applied not only to the daily affairs of the local union but also to the critical and data-laden efforts of bargaining, grievance handling, and arbitration (Daniels et al., 1986). Collective bargaining computer simulations also have been created. A specific downside result of the office computer revolution is the potential for industrial health problems, visual and otherwise, caused by video display terminals. Labor education programs likewise have dealt with this issue. Technology in the area of video productions also has found its way into course offerings and public service, including the hiring of video specialists on labor education faculties/staffs.

The highly controversial area of labor-management cooperation/employee involvement schemes is becoming, though not necessarily fashionable, an area which labor education increasingly is willing to broach. Similarly, concerns generated by geographical/political considerations also enter the equation of course determination. The influx of immigrants into the nation and the resulting impact on the local economies, job market, unions, and union membership has caused labor education programs in affected areas to develop programs to deal specifically with such issues. Indeed, universities in states with large Hispanic populations have created faculty/staff positions that specialize in working with Hispanics.

Leadership, long a staple of labor education, has been revitalized with a new approach, including contingency and transformative leadership, which removes it from the bread and butter category and enters it at the cutting edge. The problems of unemployment and displaced workers have been addressed in hands-on fashion, including funding through the Job Training Partnership Act (JTPA) (Micallef et al., 1988). Many labor education programs have entered the teaching arena with the unique UAW-GM PEL (Paid Educational Leave) program. An outgrowth of the UAW-GM cooperative efforts, PEL addresses many general topics while remaining industry-specific to the automotive industry with a high concentration on Japanese competition. (PEL now is moving into electromotive as well.)

International issues, while not *de rigueur*, are increasingly addressed by labor education and go beyond the single issue of multinational corporations. A conference on policy issues facing the U.S. and Canadian labor movements on such matters as trade, labor law, health care, privatization, and economic restructuring is forthcoming. In 1988, over 20 UCLEA-affiliated institutions hosted representatives from Swedish blue-collar and white-collar unions in seminars and forums on labor management relations in the two countries (Eiger, 1989). Changes in work force demographics have brought to the fore important issues for working women and labor unions, including topics dealing with temporary and part-time work, child care workers, and industrial homework.

The research needs of workers and unions have not been overlooked, and various types of grants and research include: training programs on labor-management committees, health care cost containment, right to know, and labor's image; a study of employee assistance programs; enhancing the ability of educators to teach labor law; and a study on the perceptions of local union leaders on labor law and contract knowledge.

The UCLEA: Present and Future

At age 30, the UCLEA should have a clearer sense of self. Perhaps with the changes in the hiring of labor educators, Nash's aforementioned threefold typology continues to obtain, but perhaps with an increasing emphasis on the Careerist over the Missionary and the Professional Services Expert over both. Or there may be an increasing intellectual independence among labor educators toward their client unions and their own institutions, as well as the UCLEA itself.

Although still sorting things out, the UCLEA is moving ahead in a direction of increased professionalism. Clearly the task is far from over and will be many years in the making. Important aspects of what has been accomplished in recent years to raise UCLEA standards and, perhaps, those of labor education itself, find their origins in two internal documents: the Report of the Committee on the Future (UCLEA, 1987), a two-year critical self-study; and "Proposals for Action" (Rosen, 1985), the results of a member's year-long sabbatical research on the Association.

The UCLEA and its role are evolving. The Association often has been a reflection of changes in the field rather than an initiating force for them. Perhaps this too is changing. The 1978 constitution gave recognition to the fact that there are areas of divergent as well as congruent interests between individual professional faculty/staff and those of directors/chairs of labor education programs. Thus, the creation of an Association with two constituent bodies: one of individual professional members and the other of academic institutions. Although at times an uneasy alliance (Nash, 1978), this structure has lasted solidly for over a decade. Recent constitutional revisions in 1987 displayed none of the animosity of 1978. Likewise, a major dues structure overhaul with substantial increases, never a popular idea in any organization, evidenced an understanding that, financially, the organization simply could not remain static.

Research has played an increasingly important role in the Association, probably, but not totally, because of the changing makeup of its membership. The UCLEA Resource Directory prepared for union education departments, an idea which originated with the labor movement, is an outreach attempt to provide unions with a reference work detailing the research, teaching, and speciality interests of the UCLEA-affiliated institutions and individual members with whom they deal. The *Labor Studies Journal* has moved from an occasional to a quarterly journal, thus increasing not only its own status but also opportunities for publication and research by labor educators. The *Labor Studies Forum*, a newsletter about which more follows later, has become yet another outlet for thoughts, ideas, research, and discussion by and for labor educators. To promote scholarly inquiry into labor education, the UCLEA archives were established at the Southern Labor Archives of Georgia State University with plans to expand it to include labor education per se.

Although formal proceedings of UCLEA annual meetings are not published, an important step forward was taken with the publication of abstracts from these meetings. Further, more time was added to annual meetings in order to accommodate ongoing professional development. There soon will be a career achievement award to recognize the significant contributions of those in the field. And in an updated variation on the old theme of establishing a national clearinghouse for materials, The Committee on Electronic Communication will study ways to enhance information and data sharing through computers and electronics, including the possibility of a national labor educators' bulletin board.

In the best tradition of a voluntary organization with no paid staff, some of the Association's most creative initiatives have come from the bottom up rather than the top down. Through the Committee on Trade Union Women, the UCLEA has coordinated and sponsored summer residence schools for union women for nearly 15 years. The Commmittee on Black Workers recently developed and coordinated the first residence school for African-American and minority workers. The Building Trades Task Force, once almost dissolved because of inaction, has risen to the challenge by developing conferences and materials for labor education with the building and construction trades, an historical under-utilizer of labor education (Nash, 1978).

The Worker Participation Task Force has grappled with the controversial issue of labor-management cooperation/employee involvement and developed conferences on and materials for the teaching of this subject.

One of the best accomplishments of the recent past also should play an important role in the future of UCLEA. The *Labor Studies Forum* can keep labor educators abreast of what the Association, individual members, and institutions are doing. Moreover, it holds the promise to take us as labor educators *beyond ourselves* through information about funding opportunities, calls for papers, other relevant publications, books for review in the *Labor Studies Journal*, and meetings and conferences of other scholarly and labor organizations in which UCLEA members may be interested.

The UCLEA currently is involved with other professional organizations. It is a member of the American Association for Adult and Continuing Education (AAACE), the Coalition of Adult Education Organizations, and the International Council for Adult Education, as well as the Committee for Full Funding. However, these relationships, though important, generally are at an abstract representational level.

What is needed is more involvement at a level where UCLEA members themselves may actively participate, i.e., the program and research level. The AAACE, for example, has a Labor Education Unit in which UCLEA members are active. A natural association is with the IRRA which many labor educators are members of and active in, both nationally and locally. Recently, the UCLEA was requested to consider, and later approved, endorsement of the American Association of University Professors' *Statement on Academic Freedom and Tenure*. Certainly there are labor history societies, among others, which share a certain community of interest with the UCLEA. But if such relationships are to develop, we must take the initiative and pursue our own opportunities.

Conclusion

It would be less than forthright to imply that all is well in the UCLEA or labor education. The UCLEA needs to be more relevant to the professional working lives of labor educators. For example: Although it is understood that individual institutions make their own decisions, the UCLEA still should take stands on certain issues of special importance in labor education. It may well be too late, but the Association should make an official policy statement on what is appropriate research in labor education, just as it now is developing a statement on academic freedom for labor educators not protected by faculty rank. Similarly, the UCLEA should speak out on the importance of trade union experience in the hiring of new labor educators. This is not an atavistic statement that Ph.D.s are not welcome in, or important to, the field but rather a simple recognition of the intrinsic value of trade union experience in the field of educating trade unionists. It must investigate international labor education and research and teaching ties, such as recent attempts with the Japan Institute of Labor, and the efforts of the International Labor Education Committee.

There are signs that labor education has matured as a field and the UCLEA as an organization: that we are less uncomfortable, insecure, and self-conscious about being in the academy. With this new maturity, the UCLEA should be a catalyst for new undertakings and areas of study. It should seek to be an innovative force in the field. Members must put aside internal squabbles which in the past have left us on the sidelines of certain important issues and aggressively seek research and teaching grants which benefit workers, unions, and the Association. As educators, we must be open-minded about new ideas and concepts, willing and able to question our own assumptions as readily as we do those of others, and prepared to tackle controversial issues. We must realize that we can maintain our ideals without being shackled to ideology.

Endnotes

[1] The author is President of the University and College Labor Education Association (UCLEA). The opinions expressed here are his own and not necessarily those of the UCLEA.

[2] As used here, labor education refers only to university and college-based programs. It includes both traditional labor education (noncredit) and labor studies (credit) programs.

[3] The University and College Labor Education Association is composed of two constituent bodies: an Institutional Council of affiliated labor education/labor studies programs at higher education institutions; and a Professional Council of individual faculty/staff members in labor education/labor studies programs.

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DISCUSSION

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The focus of my remarks is on two topics covered in the three papers—academicization of labor education and the shift in industrial relations from collective bargaining to human resource management—and how these trends affect the type of research useful to unions.

Effective union research activities, in my opinion, are those which:

- help international staff and local union officers make intelligent decisions in their day-to-day union activities; and
- assist unions (national and AFL-CIO) in establishing new programs, directives, and organizations.

Over the past few years, positive research contributions have included reasons for the decline in the labor movement, factors affecting specific organizing campaigns, analysis of effective grievance procedures, qualities of a good steward, and measurements of commitment to unionism. However, looking at the overall needs of unions, there is a lack of effective research to help unions understand reasons for plant closings, the impact of technology, or the effects of gain-sharing or profit-sharing programs; likewise, few research activities measure membership apathy, how local union leaders emerge, how union decision-making processes work, etc.

Major union decisions to establish an associate membership category, a new organizing approach, or a new organization structure have generally been made with little reference to research investigations.

Some of the reasons why union research has lagged far behind those dealing with the management side of businesses are presented in the papers. For example, Seeber cites the shift of industrial relations faculty away from collective bargaining to the human resource area. The papers also emphasize theory-based research, looking at the long-

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term versus the short-term, and are concerned with cooperation and accommodations rather than conflict and advocacy.

The Clark and Gray paper, which at first impression shows that labor educators are interested in, and actually conduct, considerable research, upon closer examination reveals that most of the research is: (1) done by newly hired educators (many holding PhDs), and (2) is defined as "applied research." This research is primarily for the development of course material, which in the traditional academic setting, is regarded as an element of teaching rather than research. Though this classification arose because of the special circumstances of labor educators who devote the vast majority of their time to delivering union education programs, often involving a considerable amount of travel, it nevertheless should not be equated with "scholarly research." Only six percent of the survey respondents devote 100 percent of their research efforts to scholarly research. Interestingly enough, their statistics show that the more-senior labor educator faculty members do not engage in as much research as younger faculty members.

The Marrone paper mentions new courses offered by labor educators as proof that they develop new material on such topics as literacy, immigration, or AIDS in the workplace. This trend has been occurring for many years because of ever changing areas of emphasis in industrial relations. However, it is actually an impediment to effective research because faculty members often do not concentrate long enough on any one topic to gain enough expertise to do meaningful research.

None of the three papers answers the key question—will these trends produce more qualitative union research? One can argue that reliance on younger labor educators having limited union exposure or experience will not be likely to produce much research valuable to unions.

There are three major obstacles faculty members need to overcome to produce useable research for unions. First, unions have an innate aversion to research, are often frightened by statistical correlations, and sometimes do not see the relevance of research. Parenthetically, these factors prohibit the dissemination, within the union organization, of the few good research papers that are produced.

Second, there are natural barriers to gaining access to union data, particularly for younger industrial relations or labor education faculty members who do not have the contacts or political know-how to overcome those barriers. Correspondingly, there are a number of sensitive research topics for which unions, under no circumstances, will allow researchers to investigate. Third, there is the important question of funding faculty research. When unions do fund research, they often do not turn to industrial relations or labor educators but rather look to faculty members with specific specialities such as sociologists, psychologists, political scientists, hygienists, drug experts, etc. They also feel more comfortable contacting outside professional consultants, especially pollsters, rather than turning to university faculty. When money is allocated for union research projects it oftentimes results in broad, overall surveys that describe trends that have limited applicability for unions.

The bottom line is that these obstacles, when combined with the trend of deemphasizing collective bargaining by the industrial relations faculty and the lack of demonstrable union research by labor educators, lead to the conclusion that the prospects for effective union research by the two classes of individuals are extremely limited in the immediate future.

DISCUSSION

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First, I would like to summarize what I perceive as some significant trends as a backdrop for discussing these particular papers. In part, I draw from the papers themselves, and in part elsewhere. Some notable trends in labor education (LEd) include the following.

- Changes in subject matter toward more technical issues such as toxic substances, and possibly away from issues of political economy and labor history.
- Pressure from universities to become self-supporting, and in some cases, to be "cash cows" (money-makers).
- Credentialism—doctorate degrees are increasingly required for LEd positions but not always based on job requirements. At least some elements of gaining respectability from universities and non-LEd colleagues are involved.
- A trend toward "labor studies" or the "new" labor history as distinct from "labor relations" or the "old" labor history. More emphasis is placed on individual workers and less on their institutions.
- LEd is increasingly judged by academic (publish or perish) standards. Emphasis is shifting from knowledge dissemination to knowledge creation.
- Arguably at least, there exists a growing gap between LEd and industrial relations (IR).
- A shift in LEd research from a practitioner-oriented approach (development of teaching materials, descriptive and advocate research) toward more "scholarly" research aimed at peer audiences including academics outside LEd.

These trends and possibly others I have overlooked reflect various forces including general trends in academe. Clearly, however, the decline of unions is a critical factor. When unions were still surging in membership growth in the 1940s and 1950s and many IR institutes

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were established with LEd functions, unions argued forcefully that universities should provide something like a counterpart to the extant colleges of business. The political compromises reached fell short of union hopes by providing IR institutes that were nominally neutral although in practice they often included a strong emphasis on service to the labor movement. An implication of these origins is that LEd and IR programs needed little justification in terms of scholarship or revenue generation. With the decline of the traditional LEd constituency, the criteria for evaluating LEd have shifted, and many of the trends described above reflect this shift.

The papers by Seeber and by Clark and Gray start from different approaches, the first offering an impressionistic analysis of the LEd-IR nexus and the second a survey-based account of LEd research, and it is interesting and important that both share some themes. There is much in both papers that is plausible and that I agree with, but I will stress one central issue raised by both papers that merits emphasis.

Seeber and Clark and Gray rightly give substantial attention to the role of labor educators as "translators." IR scholars, like other academics, are first and foremost peer-oriented. When one becomes adapted to addressing such peers, it can be difficult to address a more general audience, such as local union leaders. There is a critical gap and labor educators seem to be situated to bridge it.

And, as both papers note, translation is a two-way affair. Labor educators are in a position to interpret the needs and desires of unionists in ways that can help more scholarly oriented colleagues recognize them as research issues. More tangibly, labor educators can provide valuable introductions and access to sites and data that are otherwise not available.

An obvious problem with this translator role for labor educators is one of role conflict, which is of course a more general difficulty for labor educators. From the ivory tower perspective, translator roles may not add much to one's vita. An implication is that within academe, performing this vital role contributes to a "second-class citizen" status for labor educators. From the shop floor perspective, where skepticism about research abounds, labor educators who strive to function as translators may be deemed guilty by association.

It seems trite to sum up by saying these are interesting and challenging times for LEd. There are simultaneous and partially conflicting forces at work. On one hand, the "academicization" of IR and the decline of unions have widened the IR-LEd gap, but these trends are more recently altering LEd as well. The subsequent metamorphosis of LEd raises questions as to the distinctness of functions for LEd and IR. On the other hand, the "corporatization" of academe pushes LEd in the direction of a client orientation and accentuates the translator role for LEd, which is somewhat at odds with academic trends and status aspirations of some labor educators. There are movements simultaneously in both directions: Some universities encourage "marriage" of the LEd and IR functions while others encourage "divorce." My own view is that LEd must retain its distinctive emphasis on the dissemination of knowledge and the translation function. At the same time, university administrators and faculty must recognize the vital role of these functions and the limited applicability of knowledge creation criteria for judging LEd. Larger trends in academe and IR have disrupted the traditional balance of LEd and IR program roles, and current trends in LEd reflect strivings toward a new balance. These papers contribute to a necessary dialogue on these issues.

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XIX. INCORPORATING MICROCOMPUTER TECHNOLOGY IN THE DELIVERY OF THE INDUSTRIAL RELATIONS AND HUMAN RESOURCES CURRICULUM

Building a PC-Based Human Resource Management Curriculum at the School of Industrial and Labor Relations, Cornell University

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The Purpose of the Project

In the early 1980s the faculty of the Department of Personnel and Human Resource Studies at Cornell University's New York State School of Industrial and Labor Relations began to see the inevitability of the reliance on PC technology by human resource management (HRM) and industrial relations (IR) professionals. The increasing pace of change, increasing globalization, greater recognition of the importance of HRM to achieving competitiveness, increased desire for new forms of industrial relations, and increased demands for accountability by professional managers of the employment relationship were combining to change the nature of HRM and IR. The future would require human resource (HR) managers to work with less resources, but to accomplish more. Industrial relations centers and some business schools generally provided little training in computer technology, and the entire area of automated human resource information systems was in its infancy.

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In September 1984, IBM Corporation, through the office of Walton E. Burdick, then Vice President of Personnel, agreed to jointly support an experiment to determine the effects of introducing PC technology into the HRM and IR classroom. Cornell's Department of Personnel and Human Resource Studies and the School of Industrial and Labor Relations was chosen for the experiment because it was the only school of its kind containing 50 faculty members devoted to studying the employment relationship, with 10 of these faculty members comprising the Department of Personnel and Human Resource Studies. The school's degree programs encompass 640 undergraduates and 100 graduate students and offer as many as 20 introductory and advanced elective courses in human resource management every semester. The joint project would be coordinated by the Department of Personnel and Human Resource Studies, in cooperation with IBM executives.

The joint project set the following six goals:

1. Evaluate the PC network concept as an ILR teaching environment;
2. Evaluate the HRM applications implemented on the PC network;
3. Evaluate system performance relative to HRM subfunctions, user knowledge, and HRM course content;
4. Evaluate student use of the PC system over time and experience;
5. Evaluate PC usefulness for HRM data collection and analysis; and
6. Evaluate how PCs affect the ILR school.

Year One: Initial Implementation

Physical Implementation

The first semester of the project involved initial set-up and design activity. The school provided classroom space. The original design included two general types of computer-based installations. The first was a decentralized set of installations placing computers directly in faculty offices. Faculty members were chosen based on their commitment and written proposals to develop classroom-based materials relevant to the six goals of the project. We have found that faculty members develop research and educational materials more readily when they have access to the PC as a tool in their offices.

The second type of installation was the ILR-IBM Personal Computer Learning Laboratory. This facility was housed in a former classroom and thus was readily accessible to students. Faculty, students, and the school's existing computer consultants worked together to set up 15 workstations consisting of IBM PCs with dual floppy disk drives, 512 kilobytes of RAM, color monitors, and graphics printers. These 15 workstations were linked to a local area network using IBM's first network software, PC Cluster. Though rudimentary by today's standards, even this early network arrangement proved valuable because it allowed educational applications to be served from a central PC which was maintained and monitored by the staff of the computer laboratory. This greatly reduced the need for distributing floppy disks with software, and thus, enhanced reliability and security. The network concept also enabled the lab to create a standard menu that would appear whenever students started up the machines. This menu not only gave students an immediate road map, but it listed all of the applications available in the laboratory. Even novice computer users found that they could quickly start up and run the applications easily using this menu system. Because the menu system is centralized, it is also easy to update and change the applications by simply storing them on the central file server.

The laboratory was staffed through the offices of the school's existing group of computer consultants. These consultants had previously been primarily concerned with assisting faculty members and graduate students in their use of mainframe computer statistical packages. They quickly became familiar with the PC technology, set up and organized the arrangements for laboratory staffing and security, and then hired part-time students to staff the laboratory. The lab is available from roughly 8:00 a.m. to 11:00 p.m. When necessary, software manuals (but not software disks) are available on two-hour loan as library reserve books, through the Martin P. Catherwood Library of Industrial and Labor Relations, housed in the same building as the Industrial Labor Relations school.

"Personal Computer Applications in Human Resource Management" Course

With the laboratory up and running in the fall of 1984, a primary objective for the spring semester of 1985 was to begin the educational activity in the classroom and monitor its progress and effects. The first course we developed was called, "Personal Computer Applications in Human Resource Management." The objectives of this course were formed through interviews with leading executives, as they responded to the question, "What would it mean to you to be able to recruit 'computer-literate' human resource professionals?"

The executives' answers to this question suggested the following guidelines: (1) While understanding programming logic is important, we do not need individuals who simply have learned a variety of programming languages; (2) The key qualification remains thorough analytical training in theories and processes of HRM; (3) A computer-literate HRM professional will identify goals and tasks using analytical skills but will know enough about computer tools to apply them in ways that enhance job and organizational performance; (4) Rather than requiring specialized software and hardware, the most useful professional will be able to use readily available configurations of PCs with standard generic software packages.

Based on these findings, we designed the first PC course to be an upper-level elective, with enrollment available only to seniors and second-year graduate students who had completed statistics, basic personnel management, and at least two elective courses in a specialized HRM elective (such as Administration of Compensation, Employee Selection and Staffing, Training, Planning, and Cost-Benefit Analysis To Personnel/Human Resources Management). Thus, the students in the first class were already highly qualified professionals, and the class was designed to give them the generic computer tools needed to bring computer literacy to their professional preparation. The one-semester course was divided into two parts—the first dealing with LOTUS 1-2-3, a spreadsheet software, and the second half dealing with dbase, a widely used relational database management software. Each half of the course was devoted to about four weeks of intensive instruction in the software itself, using examples specifically constructed from important human resource management issues. Following this intensive training, student groups were formed, with each group tackling a different human resource issue of the group's choosing. The objective of the group project was to construct a menu-driven program, using either Lotus or dbase, that addressed a realistic HRM issue and that could be used by a novice computer user. Groups produced not only program applications, but also detailed technical descriptions of the program and user's manuals designed for hypothetical future users.

Results from this class have been unexpectedly sophisticated. Student applications frequently rival those available from consulting firms and software organizations. Over the six-year project, this class has evolved into a "live case" format, in which the student groups work with representatives from leading organizations to identify and design their programs. The resulting programs often become prototypes for actual tools used by those organizations. Students report that they use their portfolio of classroom-developed computer applications in interviews, just as architecture or art students might bring a portfolio of their work. The response from recruiters has been enthusiastic from the beginning, and students who have experience in this class continue to command attention and attractive offers from organizational recruiters.

Developing PC Applications in Other Classes

Faculty in the Department of Human Resource Studies, and in other departments within the ILR School, began developing computerized educational applications in Administration of Compensation, Human Resource Planning, Cost-Benefit Analysis To Personnel/Human Resource Management, and Employee Selection and Staffing. Such applications are most effective when they proceed from clearly defined analytical models and when they are used to enhance understanding of topics which would otherwise involve tedious and time-consuming mathematical computations. For example, using merit increase grids to express policies related to incentive compensation is a standard concept in virtually every compensation course. Fully understanding the concept requires the recalculation of a matrix of salary increase percentages applied to samples of workers with varying performance and salary-grade positions. Ordinarily, instructors must settle for describing the process in general terms or assigning the computations as homework. Either way, students tend to become distracted by the effort needed to keep the computations accurate, and they may lose sight of the important theoretical and policy principles underlying such grids. The PC can accomplish the computations quickly, allowing the students and instructors to put aside the computational worries and concentrate on the important learning objectives.

Overall Effects on the School

After only one year, the dramatic effects of injecting PC power into the HRM curriculum were apparent. Faculty members in other areas began to explore new applications of the teaching lab, and requests increased for hardware and software to develop new applications. Students with as little as one semester of PC experience demanded ever more sophisticated software and hardware applications in such areas as graphics, communications, and statistics. Finally, the school's external constituents such as recruiters, faculty members from other schools, students considering enrolling in the program, other schools at Cornell University, etc. became aware of the project and began requesting information on its institutional arrangements and effects.

Year 2: Growth and Enhancement

In the fall semester of 1985, we began a constant process of upgrading and improving the project. IBM's commitment to keeping the initiative at the state-of-the-art status was invaluable to this process.

Upgraded and Improved Teaching Environment

The computer laboratory was upgraded to include more powerful Local Area Network software and hardware, greatly increasing speed and efficiency. Moreover, the arrangements for staffing and running the laboratory were improved as we learned from the first-year experience. Consultant staff was expanded, hours of operation were lengthened, and a more efficient process for tracking student and faculty usage was initiated. Communications capability was added, and an agreement was reached with the Human Resource Information Network providing student and faculty access to this on-line news service. Students could now use the computer to gather facts and background information in preparing their classroom projects. Enhanced graphics capability was added with IBM's *PC Storyboard*, as well as hardware such as plotters and color graphics printers.

Faculty support was also enhanced by providing faculty members who were developing new applications with more powerful computers, including faster processors and hard disks. It became apparent that faculty members who wished to stay current had to advance more quickly than students. Thus, faculty members teaching a class that made use of a particular software or hardware feature would first master it, and then bring it into the classroom. Often, students were instrumental in this process, serving as useful colleagues in the learning process.

Implemented PC Applications in Additional Classes

With the Personal Computer Applications class well underway, other elective classes incorporated PCs. Software applications under development in Year 1 became real classroom tools in Year 2, especially in elective courses in Administration of Compensation, Human Resource Planning, and Cost-Benefit Analysis To Personnel/ Human Resources Management. These classes encountered some duplication of effort, as students were given the same introductory familiarity with PCs and the laboratory in all classes.

Continued Enhancement of the ILR School's Visibility

Though the initial reaction to the project in the first year had been strong, it was during the second year that awareness began to build rapidly. Large numbers of organization recruiters now were asking students about their computer literacy. Early graduates, now employed as human resource management professionals, were returning to report on their experience, and their employers were now returning in an effort to increase the number of professionals with these skills. We began to assist others interested in developing their own program in this area. Presentations at national meetings as well as at specific schools helped to spread the word.

Year 3: Consolidation and Integration

By the fall of 1986, the final year of the project agreement, it had become apparent that PCs and computer-based instruction were a necessary and permanent part of the HRM and IR curriculum. Activity focused on consolidating what we had learned into an institutional arrangement that could be maintained over the long term.

The PC-Based Human Resource Management Curriculum

The unique educational opportunities afforded by the PC in virtually every HRM function convinced us that we needed to incorporate the use of PCs throughout the HRM curriculum in the ILR school. We had already developed the capstone elective, Personal Computers Applications in Human Resource Management, as well as software applications on the PC to support most electives, such as Administration of Compensation, Human Resource Planning, Personnel Information Systems, Cost-Benefit Analysis To Personnel and Human Resource Management, and Employee Selection and Staffing. Students needed strong introductions to PC-based thinking earlier in their academic career and a focus on PC education throughout.

The "PC Basics" Class

To alleviate the need for all professors to teach the basics of computers and the use of the computer lab, we initiated a half-semester course in Personal Computer Basics. The objectives of this course were to bring an understanding of PCs and the use of the ILR-IBM PC laboratory to entering undergraduate and graduate students. Like a basic course in statistics, Personal Computer Basics is a required prerequisite for all upper-level HRM electives. This class builds student awareness of PCs and comfort with rudimentary spreadsheet, database, and graphics skills. Every upper-level elective now assumes students have a foundation in PC skills, just as such courses have required a basic foundation in statistics or economics for many years.

Specialized Software for Introductory Personnel Management

Students in introductory HRM classes had expressed interest in PCs as managerial tools. However, the software we had developed in our classes was simply not suitable for introductory students because it dealt with specialized topics or required high-level computer skills. During 1986, we developed several mini-cases based on a menu-driven Lotus spreadsheet system that was simple enough for novices to use, yet addressed issues common in introductory classes. These cases eventually were published as an educational supplement available to all professors, *PC Exercises in Personnel and Human Resource Management* (Boudreau and Milkovich, 1988). This provided an initial PC-based experience to students with no previous training in either PCs or personnel management. The exercises motivated students to gain further skills as they progressed through our curriculum.

Expanded Use of PCs Throughout the Curriculum

Virtually every course offered through the Department of Human Resource Studies now featured a PC-based component. Thus, students would first use PCs as part of their introductory course. Then, they would take the PC Basics course. Their elective courses, such as Administration of Compensation; Human Resource Planning; Personnel Information Systems; and Cost-Benefit Analysis To Personnel/Human Resources Management and Employee Selection Staffing, each use specialized PC exercises illustrating how PC-based analysis enhances HR managers' productivity. Finally, the capstone elective, PC Applications to HRM, offers the opportunity to develop advanced programming and spreadsheet and database skills. Students develop realistic PC-based tools addressing important human resource issues. The specialized software for "Administration of Compensation" was published as an educational supplement, *Salary Survey Analysis Package* (Milkovich and Associates, 1989). In addition to the use of PCs in courses offered by the Department of Personnel and Human Resource Studies, professors in other departments of the ILR school had begun to develop their own applications. Students used PCs to understand the financial implications of personnel policies, to evaluate group interactions, to calculate costs of labor contracts, and to apply statistical diagnostic techniques in multiple regression.

PCs as Integral Parts of the ILR School

With PCs in the educational environment, their use as research tools also grew. Virtually every professor was using PCs for word processing, mainframe connection, and PC-based data entry and statistical analysis. As faculty members adopted PCs, it was imperative to provide compatible PCs to secretarial and other support staff. Thus, what had begun as an educational experiment had become a catalyst to advance the school into the PC age. Articles appeared in leading newsletters and magazines (Smith and Boudreau, 1987).

Phase 2: Extending the Cutting Edge

The first joint agreement contract with IBM expired in August 1987. The project's success clearly argued for continuing the relationship. A new contract was established on the foundation of the first three years. The new agreement continued the process started with the first contract but encompassed new technology and extended beyond the classroom to the ranks of practicing executives. Thus, the new project equipped the school with PCs and software based on IBM's new PS/2 concept. The project's goals included:

1. Study how the PS/2 technology can be adapted to the P/HRM function;

2. Evaluate hardware and software for applicability to the P/HRM area;

3. Develop sample materials using PS/2 technology to demonstrate its ability to increase P/HRM effectiveness; and

4. Explore how P/HRM professionals can best use PS/2 technology in their work.

Year 4: Enhanced Technology and Expanded Outreach

The fourth year of the project saw the renovation of the PC laboratory by the ILR school to incorporate PC-compatible lighting, electronics, carpeting, projection systems, climate controls, and furniture. Into this laboratory was placed 24 PS/2 "Model 60" workstations, linked together using the IBM Token Ring Network, and connected to a PS/2 Model 80 file server. This dramatically enhanced the efficiency and friendliness of the laboratory and contributed to a large increase in its use. With the new equipment and software, existing classroom tools were upgraded, and new ones developed in virtually every area of human resource management.

The Center for Advanced Human Resource Studies

During 1987, the ILR School established the Center for Advanced Human Resource Studies. This organization, contained within the ILR School and affiliated with the Department of Personnel and Human Resource Studies, provides a partnership between researchers studying HRM issues and practicing professionals using research to improve personnel management. Though not exclusively devoted to PCs and PC-based activity, the Center nonetheless embraced the automation in HRM as one of its primary research endeavors. With more than 30 corporate members from Fortune 100 companies, the Center provides the opportunity to bring the fruits of over three years of educational development to executives.

Specialized PC-Based Executive Classes

Several courses were developed and offered to executives. All emphasize analytical understanding of the competitive advantage offered by human resource management. The computer is a tool in the hands of HRM executives, and one vehicle through which they can attain a strategic partnership in the organization. Tools and techniques first developed through university student education were now adapted and applied to provide unique learning opportunities for practicing human resource executives. The classes were conducted in the same laboratory used by ILR students, which required that they be offered during periods when classes were not in session.

Development of Compensation Training with the American Compensation Association

A team of ILR professors, Sara Rynes; Barry Gerhart; George

Milkovich; and John Boudreau, developed the first PC-based executive training course in compensation, in partnership with the American Compensation Association. The course uses a comprehensive series of menu-driven Lotus spreadsheets that illustrate the relationships between compensation decisions involving pay level, pay form, pay structure, and benefits. Once again, the learning principles embedded in this course were first established through classroom-based instruction with university students.

Year 5: Extending Beyond Cornell

Prototype for Projects at Other Universities and in Other Disciplines

The 1988-1989 academic year saw the project's successes lead to replication at other major universities. Using the model developed at Cornell's ILR School, IBM created the University College Systems unit whose mission was to extend such projects to eight other U.S. universities having ILR centers or business schools. The eight centers were Michigan State University, Purdue University, Rutgers University, University of Illinois, University of Minnesota, University of South Carolina, University of Michigan, and the University of Wisconsin. Each school has developed its own set of objectives, and is in the process of establishing, or has already established, student and faculty PC-based workstations and laboratories. In addition to the ILR-related projects, IBM has also used this model to establish similar joint projects with leading university centers in other key disciplines, such as the Rhode Island School of Design, Cornell's School of Hotel Administration, and the University of Missouri School of Journalism. Technical and academic coordinators at Cornell's ILR school have actively assisted these schools by providing information and documentation describing the Cornell experience.

The ILR-IBM Extension Executive Computer Education Laboratory

Also in Year 5, Cornell's ILR School established the first executive computer education laboratory exclusively devoted to the field of industrial and labor relations. This laboratory is similar in its configuration to the student laboratory established in Year 4, but it is located in a separate building housing the ILR School Extension Division. With its own director, this laboratory will become the focal point for an integrated executive curriculum using computers to enhance HRM and industrial relations. The executive computer education laboratory will build upon what we have learned through our experience with college students, and it will also foster a closer link and partnership between executives and faculty.

Human Resource Management Research

Studies of the effects of information and technology on HRM decision making are underway, using the student and executive laboratories to gather and analyze data.

Conclusion and Implications

The ILR-IBM PC learning project has produced revolutionary changes in Cornell's School of Industrial and Labor Relations. It has transformed the curriculum, research, and relationships with key constituents. The school now has a PC-based HRM curriculum, ongoing courseware development in several HRM functional areas, and relationships with several major corporations using computer technology to manage human resources. To summarize all that we have learned would be impossible, as the lessons range from the most detailed and technical to the most strategic. However, the following suggestions may help guide others as they strive to exploit computer technology in HRM and industrial relations education.

1. Obtain strong support from the dean or other top officials as soon as possible. These projects always involve more resources than originally forecast, and require that the top school and university officials feel ownership and have a personal stake in the project's success.
2. Set project objectives in areas of faculty interest to assure support and genuine development activity.
3. Choose a project coordinator carefully, preferably a faculty member with a strong interest and experience with PCs, and whose teaching and research interests can make use of computer innovations.
4. Capitalize on the full range of available resources in the academic program. If your program already employs computer consultants, librarians, or other support staff, attempt to get them involved in the project. Try to structure the project so that it fits their needs as well.
5. Construct the educational program to best take advantage of your particular student body's unique training and qualifications. The ILR School has the largest student body and the most diverse set of course offerings in human resource management and labor relations. Our project has been designed to capitalize on these factors, but other programs will identify different factors which they can exploit.

6. Maximize the project's connection to external constituents, including recruiters, other University units, local communities, etc. Though the project's basic direction should remain focused on academic goals, the more its results have implications for external constituents, the more likely it will continue to justify support.

7. Don't expect to reach everyone. There will always be faculty, students, and external constituents who simply don't choose to become involved. We have found that it is most effective to create an environment that makes participation worthwhile for most people, and then to let individuals make their own choices.

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Microcomputer Support for Teaching Union Management Relations

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Experience has taught that the microcomputer is a highly useful tool for teaching the practical aspects of union management relations. Both graduate and undergraduate programs at a number of colleges and universities have found that it is possible to significantly enrich their courses in this area by using the microcomputer. At the University of South Carolina, since the initiation in 1988 of a contract with IBM for developing microcomputer applications in employment relations, there has been rather extensive use of this teaching tool. We also have plans for experimenting with new uses in the future. This paper will chiefly reflect this experience and plans at the University of South Carolina in courses in union management relations.

Practical teaching in the field of collective bargaining covers two major subjects: contract negotiation and contract administration. The microcomputer is of some value in both of these areas, although it has historically been utilized most often in the first of these.

Teaching Contract Negotiations

In teaching contract negotiations, one of the challenges is to help students achieve an understanding of the dynamics of the process of collective bargaining—a feel for the process. There are numerous ways of doing this. Lecturing can be useful for this, particularly when it involves some storytelling by an experienced negotiator. Text discussions and newspaper reports can also furnish some useful information. However, teachers in this field have long used experiential learning to get the students closer to the complex and frustrating reality of collective bargaining. Techniques have included card games, a number of different role playing simulations that do not necessarily involve the computer (but sometimes do), and at least one computerized bargaining game.

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The computerized game (Wheeler and Hayen, 1976) involves the student bargaining with the computer as his or her opponent. In this game, the student chooses either the union or management side and the computer takes the other side. The student makes proposals and the computer responds. Upon impasse, the computer gives a resolution of the dispute. The type of dispute-resolving mechanism is varied randomly. It may be conventional compulsory arbitration, final offer selection compulsory arbitration, or strike. Since computer responses are varied, it is possible to play the game many times. It only takes about 10 minutes to engage in this exercise, permitting players to have several tries within a relatively brief period. The advantage of this game over more extensive simulations is the short time required to play it and, more importantly, the small amount of class time involved. This works reasonably well to give a "feel" for the process of bargaining. The student response is generally good, with students saying that they find this an interesting experience. It has been used with union members in labor education classes, undergraduate business students, and graduate students in industrial relations. Its chief limitations are its lack of realism in not having a human opponent, its failure to give an opportunity for persuasive argument, and its having only three issues involved in the negotiations. This has been used on mainframe computers and was marketed for this use a number of years ago by the University of Minnesota. At South Carolina, we are now in the process of setting it up for use on microcomputers.

Probably the most common use of the microcomputer in teaching contract negotiations is in calculating the costs of contract proposals and settlements. At South Carolina, we are doing this in the courses in which we teach collective bargaining, both at the undergraduate and graduate levels. In these classes, extensive bargaining simulations are used, with teams of students negotiating contracts against one another. The graduate class uses the simulation contained in one of the standard texts (Fossum, 1989). The undergraduate class uses the Wheeler and Martin (1985) simulation. In these cases, the instructors have developed their own costing techniques, using Lotus 1-2-3. This permits the rapid calculation of the effects on costs of particular contract proposals, including roll-up costs, during negotiations. In addition, the students are required to cost out the entire contract at the end of the simulation exercise.

One of our faculty, who has been teaching collective bargaining courses for 25 years, reports that the use of the computer for costing has added a new dimension of realism to his bargaining simulation. This stems in part from the students having to live with the results of their bargain, at least insofar as the financial aspects of the contract are concerned, because they can readily and accurately cost the results of the bargain. Interestingly, he installed this aspect of his simulation after one bargaining team did this on its own and succeeded in overwhelming the opposing team because of its superior grasp of costs of proposals as the negotiations proceeded.

Teaching Contract Administration

Microcomputers can also be used to help students understand contract administration. By having students develop Lotus or dBASE applications for automating the grievance log, students gain a heightened appreciation of the information that is necessary in order to effectively manage the grievance process. Commercial exercises are available to guide students through the development of a Lotus application (Penley and Penley, 1988). These exercises involve the development of applications that can be used to generate data on the number of grievances across departments within an organization and to identify common themes among the grievances.

Alternatively, more advanced students can be taught to use dBASE to develop an automated grievance log using the collective bargaining agreement for a particular organization as their guide. This requires that students familiarize themselves with the contract in order to determine what information must be collected as part of the automated log. Moreover, students have to think about critical issues in the administration of the contract in order to determine how that information will be used. Some students have gone beyond setting up database structures and have developed more sophisticated and user-friendly data entry schemes. This suggests that not only does use of the microcomputer in the teaching of collective bargaining enhance the understanding of course material, but applying the microcomputer in such substantive courses may motivate students to develop more sophisticated computer applications.

The administration of the collective bargaining contract also involves deciding employee grievances. While it is common for faculty to have students read grievances and decide them in light of the contract, the computer can be used to take this one step further. Specifically, it is possible to use policy-capturing techniques (Fossum and Fitch, 1985; Dell'Omo, 1988) to help students understand what factors they consider in making decisions about disciplinary grievances. In these exercises, the computer presents a scenario describing a disciplinary situation. The student is asked to respond to the scenario by choosing from among several disciplinary options that are ordered in terms of their severity. After the student makes his or her choice, the computer displays the next scenario. This continues until the student has responded to all of the scenarios in the exercise. If six factors are manipulated and those factors are crossed and balanced, as is the case in one of our exercises, the student is required to respond to 64 scenarios. After the student has responded to all the scenarios, the computer analyzes the responses of the student and then calculates the relative weight given each factor. This weight indicates the degree to which the student considered each of the factors manipulated in making the decisions.

For example, in one of our exercises the computer presents scenarios involving grievances over discipline in response to employee insubordination. In the scenarios we vary the level of provocation, the employee's manner, employee tenure, personal problems of the employee, and the value of the employee to the organization. For each scenario, students are asked to choose one of the nine disciplinary options ranging from no action to termination (Klaas and Wheeler, forthcoming). After the students go through the exercise, the computer provides them with their respective weights for each of the factors manipulated. We then discuss why different students used different decision rules.

Moreover, we are able to discuss the appropriateness of different decision rules in light of precedents set in arbitration, as well as existing contract language. Additionally, since a number of line and personnel managers had previously gone through the exercise, we can compare the decision rules used by practitioners to those used by the students. Using this computer exercise not only gives students practice making grievance decisions, it also provides them with insights into their own decision processes. Equally important, it is a useful tool in facilitating thoughtful discussion about the appropriate criteria to use in making these decisions.

It is important to note that while we find this computer exercise to be very useful, it is possible that much of what it accomplishes can be achieved using more conventional techniques. A skillful teacher can encourage students to think about what factors they might consider in making decisions about disciplinary grievances, as well as what factors they should consider in light of arbitration precedents. One might ask, therefore, what value does this exercise add? While we have no hard evidence in this regard, our experience suggests that computer exercises such as these have two potential advantages. First, by displaying the scenarios on the computer, having students give the computer their responses, and telling students that the computer will analyze their decisions, the exercise becomes something of a game. And like many games, students find this one to be interesting and enjoyable. Second, the quantitative nature of the results helps some students to think about the issues that we are trying to raise. Students are sometimes quite fascinated with what a particular number means and how that number compares to those obtained from practitioners. Since the numbers provide a concrete summary of how they make their decisions, students are more willing to think about whether the decision rule they used is correct. While skillful teachers may well get across the same principles through more conventional methods, computer exercises such as this do add an extra dimension to the educational experience.

Conclusions

Overall, the availability of the microcomputer facilitates the teaching of union management relations considerably. It makes it more convenient to cost collective bargaining agreements and proposals made in simulations. It gives the students an opponent for learning the challenges and dynamics of negotiating. It provides a manner of monitoring the grievance process and assists in training in decision making in discipline cases. Taken together, all this amounts to an advance in teaching in our field. While the computer will never, by itself, be capable of revealing to students the full subtlety of collective bargaining, it is a useful instrument for helping to teach some of its more important aspects. It is interesting to speculate on future developments in the use of microcomputers in teaching union management relations. Given the increasing availability of on-line databases with information on labor contracts and arbitration decisions, we might expect to see increasing efforts to use microcomputers to collect data on developments in the field. As to simulations, more realistic exercises may be designed using multimedia microcomputer systems using interactive video techniques. An obvious prediction seems to be that both the frequency and variety of use of microcomputers for teaching in this area will continue to increase.

In the world of practice, the microcomputer is a powerful tool for participants in union management relations. Both union and management negotiators can make good use of computers for computing costs as negotiations proceed. Indeed, not to use the computer when one's opponent is may be a recipe for a disastrous bargain. It also has potential for use in the construction and maintenance of grievance records. The policy-capturing analyses that can be done by computer have considerable potential for training of supervisors and union stewards. Students need to know about, and develop competency with, this tool of their trade. It may now be the case that training programs for management and union officials that neglect an education in using computers is as inadequate as training programs for carpenters that neglect an education in using hammers.

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Use of Software Packages in Teaching Human Resource Management and Industrial Relations

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At the School of Labor and Industrial Relations of Michigan State University (MSU), software packages are used extensively in teaching several courses. Complete HRIS packages are used in our courses on Human Resource Information Systems, Compensation and Incentives, and Human Resource Strategies and Decisions. We define software packages as commercially available decision support systems which utilize microcomputer technology. Systems used at our school typically retail for about $7,000 to $11,000 for standalone packages. The system configurations used for teaching at MSU, which includes all additional modules and which are networked to over 50 workstations in our IBM Human Resources Research and Teaching classroom, two computer laboratories, and faculty offices, would retail for roughly $50,000 per software package. Since we were able to obtain most of these packages as gifts or at greatly reduced prices, I offer these prices as illustrations of the commercial value of software we use to augment our classes.

Having described these packages in general terms, I would now like to outline a few of their major features in terms of their technical capacity to address issues relevant to human resource management (HRM) and industrial relations (IR) teaching.

Our basic illustrative HRIS software systems are HR 2000™ and AM 2000™ produced by the Spectrum Human Resources Corporation of Denver, Colorado. These systems use an Advanced Revelation database management system. They allow for about 1,000 data elements per employee, and when used in industry, are adequate for firms employing 8,000 to 9,000 employees (HR 2000). The Applicant Management System (AM 2000) can keep track of 20,000 job applicants and relate them to several thousand job requisitions within the firm.

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The basic HR 2000 comes with over 60 standard reports plus a report-writer capability that allows reports to be generated on any combination of the 1,000 data elements. The latest feature from this firm is a matrix report-writer that includes statistical capabilities so that statistical analyses can be incorporated into reports as well as the conventional count, list, and cross-reference types of reports typically generated.

The basic HRIS covers personnel transactions related to the following data areas, each of which has a screen allowing for the entry of 20 to 30 data elements. Figure 1 illustrates these data screens.

Obviously this HRIS software can be used to illustrate issues related to human resource planning, recruitment, staffing, equal employment opportunity (EEO), skills inventories, succession

FIGURE 1

Typical HRIS Data Entry Screens

Personal Data
EEO Entry
Organization/Location Information
Status Information
Job and Pay Date
Spouse and Dependent Data
Previous Employment Data
Military Service Data
Continuing Education, Training and Licenses
Emergency and Medical Education
Formal Education Record
Performance Review
Notepad Entries
Employee Termination
Credit Card Record
Language Skills Information
Individual Information
Test and Interview Results
Payroll Related Data
Employee Benefits - 1
Employee Benefits - 2
Section 89 Information
Union Affiliation
Earnings History
OSHA Accident Information
Grievance Information
Job Seniority Date Entry
Employee Job History
Employee Pay History
Employee Job Status History
Employee Location History
COBRA Information
Hours Entry
Absence Review 1
Absence Review 2

planning, pay planning, job evaluation, pay administration, benefits administration, Section 89 administration, COBRA administration, labor relations administration, seniority lists, grievance administration, absence tracking, position control, executive compensation planning and administration, safety, Occupational Safety and Health Act (OSHA) administration, and training administration. HR 2000 may be purchased with complex subsystem modules, including executive compensation, personnel and succession planning, job evaluation, extended benefits, position control, training and development, and health and safety administration.

The AM 2000 applicant-tracking software covers all aspects of working with job applicants, matching applicant skills with organizational requisitions, dealing with EEO issues, and providing cost analyses for recruitment channels. It clearly illustrates staffing and EEO issues and decisions.

We use a standalone package called Compmaster™ from the consulting firm of Mercer Meidinger Hansen to supplement our compensation courses. The basic components of this software package include the following features as described by its producer. These components are listed as they appear on the main menu available to students.

> Compmaster (TM) has an underlying *job oriented structure* that standardly carries information such as job codes and titles; number of employees in the job; department, unit, functional and/or other identification codes; low, average, high compensation rates; pay grade for the job and corresponding structure rates; and multiple weighted average market rate composites.
>
> The software provides support for *job evaluation* systems ranging from whole job ranking to point factor to scored questionnaire methodologies. If a factor-based or a questionnaire approach is used, the system automatically computes total point scores, assigns the job to a pay grade, and links the grade to the appropriate pay structure. There is also a built-in option allowing the analyst to compare supervisor, peer, and subordinate evaluations and to statistically audit an evaluation in comparison to other evaluations in the data base.
>
> *Multiple pay structures* can be established and different jobs can be assigned to different structures. The system has a computational utility program which allows the user to

design new structures by specifying parameters such as number of grades, differentials between grades, and spreads within grades. Each job is linked to its current administrative structure and can also be temporarily assigned to one or more "test" pay structures to permit modeling of proposed changes.

A complete module is dedicated to processing individual job market rates extracted from up to 100 *survey sources* per job. The system tracks survey data in the pay units as published in the survey reports (e.g., hourly, monthly, annual), automatically time-adjusts all rates, converts pay units, computes weighted average composites, and saves these composites to the master record for each job. In addition, fields are provided for saving source information such as survey job codes/titles, and reference information such as scope data used in job matching. The newest addition to this module is an option that allows the user to import or download survey rates into the survey data base directly from an external text file (e.g., a text file stored on a floppy diskette, obtained from the survey publisher).

The system has a module that links all job information (by job codes) to an *employee file*, the contents of which is customized for each organization. Actual compensation information per employee is required for this file, but other data such as performance review ratings can standardly be stored on each employee record. Linking all job and employee information allows the user to produce a wide range of management report—for example, a report modeling projected performance increase guidelines or a report to cost out the implementation of new pay structures.

CompMaster's *report generator* is another feature of the software. The report generator is completely menu driven and its use requires no knowledge of the programming language. The user can access all information in all system files to create reports. The number and types of reports that can be created are limited only by the imagination of the user. Examples of reports that might be created include a summary of jobs by pay grade, a summary of evaluation ratings and total point scores, or a comparative summary of average pay to the market average. The report generator allows for multiple levels of sorting, customization of labels and headers, automatic pay numbering, and computations such as comparative ratios.

The system also includes a *linear regression* that can be used to construct single regression equations between data elements (e.g., evaluation points to market). The system computes and display related regression statistics including residual charts as well as plotting a scatter diagram of the data points.

A final option, the *global editor*, gives the user the ability to create, in a spreadsheet format, files extracted from the larger system data bases. Within this spreadsheet the user can perform edit routines such as global changes to a field, data base searches for specific items, and computation of new fields based on other data elements. This editor also allows the user to export these data files in text format for use in other systems.

Now that the term "software packages" has been operationalized and clarified, I would like to make one more distinction. Our courses at MSU also use spreadsheet-based and textbook-based software available from publishers. Many fine LOTUS 1-2-3™-based applications software packages are useful in introductory courses and for familiarization with spreadsheet concepts. Authors such as George Milkovitch offer helpful instructional software to support salary survey analyses and merit increase planning in a compensation course. Typically, professor-authored software is problem-oriented while commercial software is both problem- and administration-oriented. Using both types of software together, in addition to teaching modalities of lectures, cases, research papers, individual and group projects, field research, etc., can provide an exceptional environment for enhancing student learning and subsequent on-the-job performance as evaluated by the students themselves and the firms hiring them.

To discuss teaching with software packages, it is useful to review elements of the learning process where an instructor's decisions can affect student learning. The first concept is that of *transfer of learning* from the university classroom to the job situation (Bass and Vaughan, 1966; Leifer and Newstrom, 1980). Transfer has been conceptualized in two ways: an identical elements approach and a common principles approach. Software packages support transfer even if they are not exact matches with corporate software in all firms. Software focuses on data elements necessary to make functional decisions in our field. Students gain an appreciation for data elements, formulae, calculation, need for history, tables, and reports necessary for business use or legal compliance. Important learning occurs when students must translate textbook and journal information into actual decisions and then extend this learning by considering how both theory and professionalism and practice can be optimally extended in the future.

A second element is *motivation*. Our masters in labor and industrial relations (MLIR) students were queried as part of a joint research project with IBM as part of a needs analysis process (Moore and Dutton, 1978). Data were collected at orientation before any students had actually experienced any course work in our program. Table 1 illustrates the percentage of favorable attitudes toward the use of software packages.

TABLE 1
Michigan State University-Management Labor and Industrial Relations Student Initial Attitudes Toward Software Packages

Type of Package	Responses: Extremely Pos.	Pos.	Neutral	Neg.	Extremely Neg.	No Opinion
Actual HRIS	33	36	20	4	0	7
Spreadsheets	19	32	29	7	1	12
Statistical	20	33	26	14	4	3
Actual collective-bargaining	19	28	33	3	0	2
Database management	17	31	36	5	1	12
Graphics	14	45	29	7	1	6

Note: Pos. = positive. Neg. = negative.

Reviewing Table 1, we can see that students are primarily positive or neutral toward use of software packages in the classroom and possess the highest initial interest in learning about actual HRIS packages. Students in most master's programs tend to be vocationally oriented and appreciate the opportunity to gain insight into how academic knowledge is reconceptualized into organizational decision systems.

Another dimension of learning is *attention*. Simply put, motivation influences attention and students attend to aspects of their environment that are most important to them at the time (Lindsay and Norman, 1972). The IBM teaching classroom and laboratory combines ergonomically correct seating, lighting, climate control, and workstations with powerful IBM PS/2-80 computers featuring augmented 386 chips. Because software packages tend to be rather large, i.e., between six and 25 MB for the system, powerful computers are needed to optimize student attention. Since our systems run databases of roughly 500 employees with complete records, processing times can escalate and student motivation drop when XT level computers require five-to-ten-minute waits for answers to appear.

Retention is of crucial concern to students and instructors. Software packages encourage retention through allowing students to practice dimensions of lectures, re-read and re-think material, provide images of the concepts, and help students learn through the method of guided discovery (Gagne, 1977).

Software packages also enhance the instructor's ability to provide *feedback* to students. Students enjoy interaction with the computer, discussion with team members, and interaction with the instructor on how the subject matter being discussed is treated by the software package. Students using software spend far more self-directed time on the subject matter than they would be likely to devote to textbook and library research alone. Obviously, use of software packages in addition to other tools enhances the learning environment.

At this point, it is important to clarify just how software packages are used. Basically, they are used to acquaint students with what is currently available in industry. Students master whole packages or modules, critique the packages, and demonstrate the software to classmates. These activities earn them only minor amounts of course credit. The major intellectual challenge delivered to our students is to design the architecture of software decision support systems of the future. Master's students, having learned the principles of database management systems and spreadsheets, are then able to be creative in conceptualizing ideal systems and critically analyzing them for legality, parsimony, and conceptual integrity. This skill appears to be highly valued by recruiters. This skill development is especially impressive considering that these students arrived with little or no preparation in this area. Table 2 shows the characteristics of our 1989 entering students.

How did MSU come to emphasize the use of software packages in HRIS teaching? Since our first HRIS course offered in 1985, we sought to use realistic systems to teach academic principles while maximizing student motivation and transfer of learning. With only a few faculty members who were trained in LOTUS or a database management package, we felt we could not profitably build HRIS packages in-house for learning purposes. Our external search involved locating vendors in *Personnel Journal*, *Personnel Administrator*, *HR/PC*, and other typical sources of software. We then called or wrote various

TABLE 2

Self-Reported HRIS Competencies (%)

Non-user	88
Beginning user	8
No response	4
	100%

software houses explaining that we had an academic interest in their software. We purchased many demonstration systems and taught plausibly with them for the first year or two. After assessing quality and listening to student criticisms, software from Spectrum, Mercer-Meidinger Hansen, and Silton-Bookman systems were ultimately acquired. The review process continues. One special point deserves mention. Instructors must constantly walk a fine line in terms of appearing not to endorse any one firm's software. Clearly, the choice of software and hardware creates images of acceptability for students. Only by constantly emphasizing that the software is for instructional purposes and encouraging student experimentation and criticism, can the apparent endorsement be moderated. I feel it is important to use the software appropriately and teach students the principles necessary to evaluate any decision support system.

Teaching with software puts several additional demands on the instructor. These demands include mastering the software, ensuring strong computer and systems support for the classroom, designing appropriate academic uses of the software, etc. These tasks require massive amounts of time and tend to be appreciated by students and unrewarded by administrators, many of whom are not particularly familiar with computers. Fortunately, MSU appears to be an exception to this statement, and our faculty members have actively been encouraged to enhance teaching through self-designed courseware and use of software packages.

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XX. CONTRIBUTED PAPERS: COLLECTIVE BARGAINING

Information Sharing and Collective Bargaining in Japan: Effects on Wage Negotiation

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This study focuses on one industrial relations activity—wage negotiation—whose process and outcomes firm management may attempt to influence by sharing the corporation's private information with labor. In the United States, information sharing outside collective bargaining has been put into practice only recently (Lewin, 1989). In contrast, the Japanese industrial relations system has developed and widely institutionalized a labor-management information-sharing mechanism called Joint Consultation Committees (JCCs). In this paper, using a data set obtained from 97 bargaining pairs of large Japanese unions and firms, I investigate the relationship between management's voluntary information sharing and the process and outcomes of wage negotiation.

The Joint Consultation System as an Information Sharing Device

Roshi Kyogi Sei or the joint consultation system is one of the pervasive labor-management institutions within Japanese enterprise unionism.[1] The system was first introduced by management and has spread since the mid-1950s with the extensive promotion of the Japan Productivity Center (Shimada, 1982). According to Shirai (1983):

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> The joint consultation system in Japan serves mainly as a channel for management to inform and consult with labor about the current business status of the enterprise to which they both belong, any problems and their possible solutions, management programs or plans for future investment, plant location or relocation, manpower adjustments required by the introduction of a new technology and the possible impact of such technologies on employment and working conditions (p. 120).

Thus, the two major functions of the joint consultation system are management's voluntary information sharing and prior consultation with the union and employees.

In order to perform these functions, many Japanese corporations establish what is most often known as *Roshi Kyogi Kai* or JCCs[2], involving both senior corporate executives and high-level union officials. As noted by previous authors (Shirai, 1983; Park, 1984), most firms separate the JCCs from collective bargaining; the determination of wages and other working conditions belongs to the annual enterprise-wide bargaining, most often known as *Shunto* (Spring Wage Offensive) negotiations. Instead, the establishment of a JCC allows management to engage in continual information sharing and consultation with the union outside collective bargaining.

Theoretical Frameworks

Much of the literature on information and wage negotiation follows the general proposition that lack of information (and the resultant miscalculation of each other's bargaining positions) will lead to prolonged negotiation and increases the probability of a strike (Hicks, 1946). Both theoretical (Hayes, 1984) and empirical (Tracy, 1987; Gramm, Hendricks, and Kahn, 1988) research have focused on the process of wage negotiation, especially on the role of information in negotiations that result in strikes. In contrast, the outcomes of wage negotiation—e.g., the levels of wage increases demanded and obtained by the union—received relatively little attention.

Process of Negotiation

Tracy (1987) argued that unions use successive wage demands and the threat of a strike to overcome the informational asymmetries inherent in the negotiation process. In his formulation, firms are assumed to have access to private information unavailable to unions, and unions attempt to infer firms' true profitability by starting from a high wage demand and lowering their demands when management rejects the demand. Hence, the larger the information asymmetries, the more prolonged the negotiation and the higher the probability of a strike. Similarly, Gramm et al. (1988) proposed that information uncertainty in the negotiation process raises the likelihood of expectational differences between labor and management and thus the probability of a strike. According to their model, information uncertainty leads to expectational differences between labor and management, which in turn increase the likelihood of a long negotiation and not settling before the strike deadline. Unlike Tracy (1987), however, Gramm et al. (1988) also maintained that expectational differences and high strike probability exist even when labor and management use the same information. They argued that sharing the same information will not narrow the expectational differences when the information itself contains uncertainty and is subject to different interpretations. Based on the experimental results in Roth and Schoumaker (1983), Gramm et al. (1988) proposed that only when the bargainers learn (by prior training in Roth and Schoumaker's experiment) to reduce information uncertainty is the probability of a dispute lessened.

These two theoretical formulations generate the predictions for wage negotiation. Tracy's (1987) model predicts that when management voluntarily shares confidential information with the union, the parties are less likely to prolong negotiation. The predictions from Gramm et al. (1988) are less straightforward because, according to their model, even when labor and management share information, the underlying uncertainty will lead to expectational differences. However, it seems reasonable to expect that in JCC meetings, management not only provides information but also tries to communicate their interpretation of it. Consequently, to the extent that management succeeds in sharing the interpretation of information as well as the information itself, differences between labor and management expectations will be narrowed, leading to shorter negotiations and fewer rounds of offers and counteroffers.

Outcome of Negotiation

The predictions on negotiation outcomes are generated from two models: residual claimants and goal alignment (Kleiner and Bouillon, 1988; Morishima, 1989). According to the residual claimants model, the union's goal in negotiation is to obtain as large a share of the firm's profits as possible. Under the condition of no or little information sharing, however, unions do not have an accurate estimate of the firm's total profits, and therefore, may not be able to demand or obtain a large proportion of the true profits (Kleiner and Bouillon, 1988). In contrast, when at least some private information on the firm's performance is voluntarily provided by management, the union is in a position to use this information to estimate the true size of the "pie" to be divided. As a result, when management voluntarily shares information with labor, the union is likely to demand and obtain a larger share of the profits. Thus, the model predicts that as information sharing increases, initial union demands and the final wage settlement increase.[3]

The goal alignment model argues, contrary to the residual claimants, that voluntary information sharing by management serves to align union and employees' goals in wage negotiations with those of the management (Morishima, 1989). It posits that by sharing information on the firm's economic status, management may induce a perception among the employees that obtaining a large share of the firm's profits may hurt the performance of the firm, which may eventually leave them worse off. As a result, when the goal alignment process operates, unions are less likely to demand and obtain high wage increases. Thus, the model predicts that as information sharing increases, union's initial demands and the final wage settlement decrease.

Is More Information Better?

One of the unresolved questions in information sharing is whether the provision of additional information always produces effects with the same magnitude, or if additional information has diminishing effects. While none of the earlier theoretical models predict nonlinear effects, the implication of such diminishing returns of additional information is especially important if management's objective in sharing information is to gain benefits in negotiation. From management's perspective, if information sharing has positive but diminishing benefits, there might be a threshold level beyond which zero or reversed effects are observed. Beyond this point, provision of additional information may not only be futile but harmful. Also, from the union's perspective, if management continues to provide information, there might be a point at which the union may start to recover losses and even gain some benefits.

Sample and Data

The present data on information sharing were obtained as part of a larger study on Japanese *Shunto*. Structured interviews were conducted with unions in the 127 bargaining relationships considered influential as wage pattern setters. In the end, 108 successful union interviews were conducted, and after deleting public sector unions whose *Shunto* wage negotiations are not comparable to those in the private sector (Koshiro, 1983), 97 was the final sample size.[4] Seventy of these unions were in the manufacturing sector, while the rest were scattered over six other categories: wholesale, retail, transportation, mining, utility, and miscellaneous.

Wage Negotiation Process and Outcomes

Data were obtained on the process and outcomes of *Shunto* negotiations that took place between March and May of 1981.[5] Negotiations process variables included the duration of negotiation measured in days (DURATION) and the number of rounds that the union and management went through before reaching a settlement (ROUNDS). ROUNDS was proxied by the number of times that the union communicated different wage demands to the management. In addition, a variable tapping on a third aspect of negotiation process was calculated by subtracting the final wage settlement (FINAL) from the union's initial demand (DEMAND). This variable was named DIFF(=DEMAND−FINAL) and was considered to represent the difficulty of management and labor in reaching the final settlement.[6] Finally, DEMAND and FINAL were both used as negotiation outcome variables. DEMAND, FINAL and DIFF were all average percentage wage increases for the *Joyo* (regular) employees in each corporation. Table 1 shows the means and standard deviations of the wage negotiation variables.

JCC Variables

In order to capture the extent of information sharing within the JCCs, each union was asked whether the management provided confidential information during the 1980 JCC meetings on the following four items: (1) profitability of the firm, (2) productivity per employee, (3) staffing adjustment plans, and (4) labor cost (The percent answering Yes was 89.4%, 96.8%, 61.7%, and 50.0%, respectively). The answer to each was dummy-coded (1=yes, 0=no), and the four responses were summed to produce a scale from 0 (no information given) to 4 (all information given). This variable was named JCCINFO and used as the independent variable. JCCINFO was interpreted as the degree of overall information sharing, with high

TABLE 1
Definitions and Descriptive Statistics of the Variables Used in the Study

Name	Definition	Mean (S.D.) (N=97)
Wage Negotiation		
DURATION	Number of days elapsed from union's initial demand to final settlement	36.73 (13.69)
ROUNDS	Number of negotiation rounds proxied by the number of different union wage demands	2.10 (1.12)
DIFF	Difference between union's initial demand and final settlement in % wage increase	2.20 (1.39)
DEMAND	Union's initial demand in % wage increase	9.14 (1.93)
FINAL	Final settlement in % wage increase	6.93 (1.19)
Information Sharing		
JCCINFO	Degree of information sharing	2.79 (1.30)
$JCCINFO^2$	JCCINFO * JCCINFO	9.47 (6.13)

Source: the 1981 Union Interviews

values indicating high information sharing. The reliability of JCCINFO, estimated by Cronbach's alpha, was acceptable at 0.69. The value of JCCINFO for the seven bargaining relationships with no JCCs was set to zero. In addition, to capture the nonlinear effects of JCCINFO, the square term of JCCINFO ($JCCINFO^2$) was also included (Table 1).

Control Variables

Eleven firm and industry characteristics were also obtained from public sources in order to partial out some of the factors found to affect wage negotiation process and outcomes in previous research (e.g., Tracy, 1987; Gramm et al., 1988). The control variables included corporation's profitability (measured by return on assets), firm's total sales, capital-labor ratio, the firm's average monthly wage, the final wage increase settlement in the previous (1980) *Shunto*, industry unionization rate, industry concentration, industry growth from FY1979 to FY1980 (measured in changes in shipments adjusted for inflation), and average monthly wage within the industry. All the industry characteristics were obtained at the three-digit Japan SIC level. In addition, two industry dummies were created, one for the manufacturing industries and the other for the continuous process technology industries within manufacturing. The appendix containing the definitions, sources, and descriptive statistics of the control variables is available from the author.

Results

The results of the OLS estimation are shown in Table 2.[7] DURATION, ROUNDS, and DIFF refer to wage negotiation and DEMAND and FINAL to outcome. With regard to negotiation process, the coefficients of JCCINFO show relationships generally consistent with the theoretical arguments of Tracy (1987) and Gramm et al. (1988). More specifically, increases in information sharing were significantly related to decreases in the duration of negotiation and to smaller differences between initial union demands and final settlements. The coefficient on the number of demands made by the union was also in the expected direction, although statistically

TABLE 2

OLS Estimates of the JCCINFO and $JCCINFO^2$ Coefficients on Wage Negotiation Process and Outcomes[a]

(N=86 to 97)

Independent Variable	Coefficient (S.E.)				
	Dependent Variable[b]				
	DURATION	ROUNDS	DIFF	DEMAND	FINAL
Intercept	33.69°	5.75°°°	9.93°°°	13.77°°°	6.56°°°
	(18.57)	(1.81)	(2.41)	(2.81)	(1.95)
JCCINFO	−14.16°°°	−.37	−.92°	−1.96°°°	−.91°°
	(4.36)	(.41)	(.47)	(.64)	(.40)
$JCCINFO^2$	2.14°°	.08	.16°	.33°°	.14°
	(.90)	(.09)	(.09)	(.13)	(.08)
R^2	.35	.15	.35	.35	.39
F-value	3.22°°°	1.02	2.96°°°	3.10°°°	3.70°°°
Adj. R^2	.24	.01	.23	.24	.29

[a] See text for the control variables. Complete results are available from the author.

[b] Definitions: DURATION = number of days from the union's initial demand to the final settlement; ROUNDS = number of union demands (proxy for the number of negotiation rounds); DIFF = difference between union's initial demand and final settlement in % wage increase; DEMAND = union's initial demand in % wage increase; FINAL=final settlement in % wage increase.

° $.05<p<.10$; °° $.01<p<.05$; °°° $p<.01$

insignificant. In addition, $JCCINFO^2$, which was introduced to capture the nonlinear effects of JCCINFO, showed positive signs on all three variables, although the coefficient on ROUNDS was again not significant. Thus, the evidence suggests that while information sharing decreases the probability of prolonged negotiations, the effects diminish as the amount of information increases.

Regarding negotiation outcomes, both the union's initial demand and the final settlement were significantly lower when management engaged in more information sharing. Thus, statistical analysis supports the goal alignment model over the residual claimants, although this support was not unqualified. Similar to those for negotiation process, the coefficients for $JCCINFO^2$ were significant in the positive direction, indicating that the effects of information sharing on negotiation outcomes also wear off as more information is added.

Conclusions and Implications

The results of the present study might best be interpreted from the perspective of which party—labor or management—gains when management shares private information with unions. As far as wage negotiation is concerned, both parties gain. Information sharing was significantly related to shorter negotiations, and the difference between the union's initial demand and the final wage settlement was significantly smaller, indicating an easier bargaining process. When negotiation outcomes are examined, however, it is also shown that a shorter and easier negotiation process seems to come about at the expense of the union's ability to achieve a high wage settlement. Both initial demand and final settlement were significantly lower when management shared more information with the union. Consequently, this study indicates that, at least in Japan, management captures most of the benefits when it engages in information sharing.

However, these benefits may diminish as management shares more information. In fact, the curvilinear relationship between JCCINFO and the dependent variables shown in Table 2 indicates that there might be a threshold level at which the effects of information sharing are zero. Beyond this point, additional information may benefit labor and harm management. Therefore, this study implies that for management, excessive information sharing may be more harmful than beneficial, and for labor, a union's best strategy is to obtain as much information as possible.

Theoretically, results on the negotiation process were consistent with the information-strike relationship proposed by previous researchers (Tracy, 1987; Gramm et al., 1988). With regard to the outcome of negotiation, the results gave stronger support to the goal alignment model than the residual claimants. Interestingly, such support stands in sharp contrast to Kleiner and Bouillon (1988) who showed that in the United States, management's information sharing was related to higher wages and benefits for union and nonunion production workers, and therefore, supported the residual claimants model.

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Endnotes

[1] What follows is a rough description of the joint consultation system. A detailed case study of this system is found in Nitta (1984).

[2] A Ministry of Labor survey conducted in 1984 (Ministry of Labor, 1985) found that 72.0% of some 3,800 private enterprises with 100 or more *Joyo* (regular) employees reported having a standing JCC at the corporate level. Among large firms with *Joyo* employees of 1,000 or more, 88.4% reported a standing JCC in their enterprise, while 63.3% of enterprises with fewer than 1,000 *Joyo* employees had standing JCCs. In addition, many public enterprises as well as nonunion firms also have JCCs (Koshiro, 1983).

[3] The union's initial demands may also be high under the condition of no or little information, since when information is not available from management, the union may demand high wage increases to start the process of estimation from a better position (cf. Tracy, 1987). However, there is little rationale to expect that the final settlement will be systematically higher under the no or little information condition.

[4] The names of these enterprise unions remain confidential. The sample consists of the unions that bargain with Japan's largest corporations.

[5] This was the end of FY1980 for most firms in the sample.

[6] There were no cases of a strike in this sample.

[7] Eighteen unions in this sample reported that there was a prenegotiation JCC meeting on the 1981 *Shunto* wage issues. Since wage talks may have practically started in the JCCs for these bargaining pairs, the analysis was repeated excluding these observations. The results were substantially similar to those reported here and are available from the author.

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The Impact of the Union Organizer on the Probability of Securing a First Contract

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For many union members and officials, a victory in a representation election is not the end of a long campaign, but merely the precursor to a protracted struggle to secure a first contract. In about one of four campaigns nationwide, unions were unable to secure a first contract after winning a representation election (Prosten, 1979). Union members and officials view this as a serious problem for two reasons. First, despite the election victory the majority's desire for union representation is not fulfilled. Second, the union has expended resources on organizing a group of workers without a return on its investment.

There is a dearth of research on the determinants of first contracts. Cooke (1985a, 1985b) tested a model that focused on the effects of legal, organizational, and market factors on the probability of securing a first contract. Procedural delays in the conduct of the campaign and unfair labor practices were found to decrease the probability of a first contract being signed. The probability of a first contract being signed was improved through increasing support for the union among election unit members, the presence of a national union staff member at the contract negotiations, and the involvement of a firm that pays relatively high wages.

Reed (forthcoming) explored the differences between manufacturing and service unions in their first-contract attainment rates and organizing efficiencies. He found that service unions had much greater success in gaining first contracts, and there was evidence that service unions were able to organize more efficiently than manufacturing unions.

It is argued that during a campaign the organizer's characteristics

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and behaviors help set the tone of union-management relations, and that tone carries over to contract negotiations following a union election victory. Although organizers typically do *not* negotiate the first contract, their personal characteristics and behaviors may influence the extent of managerial resistance to signing a contract. Therefore, the question explored by this paper is as follows: Given that the union has won the representation election, what effect does the organizer have on the probability of the union securing a first contract, above and beyond the influences of environmental and other factors?

This paper builds on Cooke's earlier research on first contracts by incorporating the union organizer in the model and contributes to the literature on union organizers (Reed, 1989a; 1989b; 1990) which suggests that organizers' characteristics play an important role in determining the outcome of representation elections.

Model

The proposed model posits that the probability of a first contract being signed is inversely related to the extent of managerial resistance to signing a first contract. Managerial resistance to signing a first contract is a function of managers' evaluations of the benefits and costs associated with having a unionized workforce. Three classes of variables are expected to influence these evaluations: (1) characteristics of the organizer who led the campaign; (2) campaign practices and behavior of the organizer; and (3) other variables including characteristics of the campaign and economic factors.

Why is the role of the union organizer an important one? Besides serving as the intermediary between workers and the union during a representation campaign, the organizer also represents the union to management. During the course of an organizing drive, managers form impressions about the organizer and the union based on the latter's characteristics, strategies, tactics, reputation, and public and private pronouncements. On the margin, these impressions may affect top managers' evaluations of the costs and benefits of signing a first contract.

Top managers are provided many opportunities to form judgments about the organizer. It is posited that in forming judgments about the organizer, managers also project those judgments onto the union which the organizer represents. This projection occurs in much the same manner as job candidates form impressions of companies based upon their contacts with recruiters and interviewers from those companies (Rynes and Boudreau, 1986). These judgments, combined with other factors discussed below, influence managers' evaluations of the benefits and costs associated with unionization and, ultimately, determine the extent of managerial resistance to signing a first contract. This discussion leads to four propositions.

Organizer Characteristics

Two types of organizer characteristics are considered to be important: organizer personality and demographic characteristics.

Proposition 1: Organizers who possess personality characteristics that produce negative judgments by top managers will decrease the probability of the union securing a first contract.

An important determinant of an individual's acceptability to another is his or her personality. Even in cases where relatively objective information about a person is available, an individual's personality can be an important part of the evaluation process. One need only consider the role that evaluations of job candidates' personalities play in many academic job decisions to see the importance of personality.

Three personality characteristics of the union organizer are hypothesized to be related to first contracts. The first characteristic is Machiavellianism, or the extent to which an individual believes that others may be manipulated (Christie, 1968). A highly Machiavellian organizer may use the words and actions of management during the campaign and manipulate them to the best advantage of the union. This behavior by the organizer may increase the probability of the union winning the representation election (Reed, 1989a). However, it also may produce increased alienation and distrust among top managers toward the union. This would result in increased resistance to signing a contract. Therefore, the more *Machiavellian* the organizer, the lower the probability a first contract is signed.

The second characteristic is self-monitoring, or the predisposition to pay attention to social cues and to adapt one's behavior and self-presentation to the requirements of the particular social setting (Snyder, 1974; Caldwell and O'Reilly, 1982). Individuals who tend to read social cues and modify their behavior to fit a particular situation are high self-monitors. Low self-monitors rely more on their internal belief systems as guides to their behavior and are less attentive to social cues.

During an organizing drive there are many instances when organizers are required to interact with management. If meetings between organizers and management representatives excluded workers, one might expect that high self-monitoring organizers would be better able than low self-monitoring organizers to conduct relationships with managers in a way that enhanced the union's probability of both winning the election and gaining a first contract. The high self-monitoring organizers would adapt their behavior according to the cues they received from management.

However, when organizers interact with managers, they usually do so in the presence of organizing committee members. Therefore, high self-monitoring is expected to be negatively related to the probability of securing a first contract. These organizers may be more theatrical in their dealings with top managers and more likely to conduct themselves in a way that enhances their standing among the workers, but lowers their standing among managers. Therefore, the more *Self-Monitoring* the organizer, the lower the probability a first contract is signed.

The third characteristic is rigidity, or the "tendency to persist in responses that may previously have been suitable in some situation or other but that no longer appear adequate to achieve current goals or to solve current problems" (Wesley, 1953). Organizers who are rigid may be perceived by top managers as representing a union that will tie their hands, so to speak, and reduce their flexibility in dealing with employees. Therefore, the more *Rigid* the organizer, the lower the probability of a first contract.

Proposition 2: Organizers who possess demographic characteristics similar to the top managers' will increase the probability of a first contract being secured by the union.

An individual usually feels more comfortable interacting with another when the other person is perceived as being similar along some important dimensions (Byrne, 1971). Organizers who have characteristics similar to the average top manager's are expected to be associated with campaigns that have an increased probability of securing a first contract. Everything else being equal, managers feel more comfortable interacting with organizers who are similar to themselves—that similarity will help reduce the social distance that develops between the manager and the organizer due to the fundamental conflict over union representation. Therefore, it is expected that organizers who possess demographic characteristics that are similar to managers' characteristics will increase the probability of a union securing a first contract. The characteristics thought to be most important are social status, age, race, education, experience, and former membership in a union.

To be successful, organizers must relate effectively with workers, managers, and government officials. Organizers who are social boundary spanners (i.e., those who can effectively interact with all three groups) are expected to be more successful than organizers who are not social boundary spanners. Specifically, organizers who have experienced intergeneration occupational mobility—either upward mobility or downward mobility—are expected to be more successful in achieving first contracts than those who have not experienced mobility. There are three reasons for this. First, compared to organizers who experienced no mobility, mobile organizers have had many more experiences interacting with people from a variety of backgrounds and social strata. This "social" capital should make them more effective in their interactions with managers. Second, organizers who come from privileged backgrounds may share elements of an elite background with the manager, and this shared background will reduce some of the social distance between the organizer and top managers. Third, managerial ideology (Bendix, 1956) may be important. Managers may feel an affinity toward organizers who come from humble backgrounds and "have made something" of themselves. Therefore, the participation in a campaign of an organizer who has experienced occupational mobility—either *Upward Mobility* or *Downward Mobility*—is expected to increase the probability a first contract is signed.

Other organizer characteristics are expected to be important. Specifically, increasing age and education and the status of being white and not being a former rank-and-file union member will be positively associated with the probability of securing a first contract because these characteristics will match those of the typical top manager. A positive association between organizing experience and the probability of a first contract also is predicted because organizers are expected to improve their performance with increased experience, and organizers should learn from experience how to best manage their campaigns. Therefore, increasing *Age*, *Education*, and *Organizing Experience*, *Union Experience*, membership in the white *Race*, and not being a former *Rank-and-File* union member are expected to increase the probability of a first contract.

Organizer Campaign Practices

Proposition 3: Campaign practices by the organizer are expected to affect managerial resistance to signing a first contract by influencing managers' evaluations of the benefits and costs of a contract.

A number of organizer campaign practices are expected to affect the probability of a first contract being signed. The building of coalitions with community and religious groups during the organizing campaign should increase the probability of a first contract since other constituencies in the community are exerting pressure on management to recognize the union. Therefore, *Coalition*-building during the campaign will increase the probability a first contract is secured.

The probability of a first contract also may be affected by the depth of the organizing effort carried out by the organizer. Units that are well organized are expected to enhance the probability of a first contract. Therefore, the greater the proportion of workers who received a *Home Visit* from the organizer, or who were active in the organizing *Committee*, or who had any kind of *Contact* with the organizer, the greater the probability of a first contract.

Campaign Variables

Proposition 4: Characteristics of the campaign are expected to influence the probability of a first contract being signed.

Finally, a variety of campaign variables also are expected to affect the probability of a first contract being signed. Top managers may believe that the costs associated with not signing a contract will increase as support for the union increases. Therefore, the larger the *Percent Vote* for the union in the election, the greater the probability a first contract is secured.

The presence of an NLRB order governing the representation election is expected to decrease the probability of a first contract because it indicates increased employer resistance to unionization. Therefore, the presence of a *Board-Order* mandating the representation election is expected to decrease the probability of a first contract.

Some managers use consultants to advise them on strategies and tactics for defeating the union in a representation election. Firms that employ consultants probably are more resistant to unions initially. Following the union victory in the election, these firms may retain the consultant to develop tactics to avoid signing a contract while continuing to bargain in good faith. Therefore, the presence of a managerial *Consultant* in a representation campaign is expected to decrease the probability a first contract is signed.

The probability of a first contract is expected to be reduced by increasing *Delay* in the conduct of the election; charges of unfair labor practices (ULP) having been filed by the union against the firm during the campaign; and *Refusal* to bargain charges having been filed by the union against the firm.

Methods, Variables, and Estimation Procedures

Eight unions, employing 229 international organizers, participated in the study.[1] Two types of surveys were sent to the sample of organizers. The Union Organizer Survey elicited information on organizers' personal and demographic characteristics; of the 229 surveys mailed, 187 surveys (82%) were returned. The Organizing Campaign Survey elicited information on each organizing campaign managed by the organizer for the years 1982 through 1986. Four hundred and thirty-five Organizing Campaign Surveys were returned by 64 organizers (mean = 6.87; s.d. = 7.96). Forty-two organizers were ineligible to return the Campaign Surveys because they had not directed campaigns, but instead, had served as assistants. Therefore, the response rate for the Campaign Survey was 44 percent. Seventy-one percent (308) of the returned Campaign Surveys were elections, with the remaining campaigns being voluntary recognitions or abandoned campaigns. The unions won 155 of these elections, but 34 of these surveys were unusable because they could not be merged with the relevant Union Organizer Survey. (This means that 34 reported campaigns were managed by organizers who failed to return the Organizer Survey.) Missing values further reduced the usable sample to 107 cases. The 34 organizers of the final sample conducted a mean of 3.12 campaigns (s.d. = 2.37). Seven unions are represented in the final sample (no NYSNA campaigns are included); the mean number of campaigns per union was 15.14 (s.d. = 10.19).

The organizer personality characteristics were measured on seven-point scales as follows: *Machiavellianism* was measured with Christie's (1968) 20-item Mach IV Scale (Cronbach's alpha = .66). *Self-Monitoring* was measured with the 25-item Self-Monitoring Scale developed by Snyder (1974) (alpha = .73). *Rigidity* was measured with 39 items from Wesley's (1953) Rigidity Scale (alpha = .79). *Mobility* was measured through a coding scheme that employs categories found in the *Job Classification Guide* of the U.S. Equal

Employment Opportunity Commission. Respondents were asked to provide information concerning their occupations prior to becoming union organizers and their parents' occupations. Two variables were created to assess mobility: *Upwardly Mobile* is set equal to one if the respondent's occupation prior to becoming an organizer was of a higher status than his father's occupation; *Downwardly Mobile* is set equal to one if the respondent's occupation prior to becoming an organizer was of a lower status than his father's occupation. The reference group consists of organizers who experienced no intergenerational occupational mobility.

Three additional variables are included in the analysis as controls: the state *Unemployment Rate* during the election year and two organizer tactics, namely, *Secret* (set equal to one if the organizer kept secret the names of union supporters during the campaign) and *Petition* (set equal to one if the organizer used petitions rather than authorization cards when soliciting support for the union's request for an NLRB election). Other organizer tactics could not be used in the analysis as control variables because of their low incidence. The unemployment rate was included as a control variable because a high unemployment rate may reduce management's incentive to sign a contract: Replacement workers would be available if the bargaining unit were to conduct a job action to pressure the firm to sign a contract. The two union tactics were included because they represent possible organizer behaviors during a campaign that may influence the probability of a first contract.

The dependent variable, *Contract*, equals one if a first contract was signed and zero if a contract was not signed; its mean equals .68. The cumulative logistic probability function is the appropriate estimator for this analysis, Contract $= 1/(1 + e^{-(\alpha + \beta_i X)})$, where X is a vector of independent variables and β is a vector of logit coefficients. The logit coefficients are estimated with maximum likelihood procedures. Since the sample is restricted to campaigns that were won by the union, this analysis will yield estimates of the determinants of first contracts given that the union is eligible to secure a first contract by virtue of its having won the representation election.

Results

Three logistic regression equations are presented in Table 1, along with the partial derivatives for the significant coefficients in the final model. Model 1 contains organizer characteristics and campaign practices; Model 2 contains nonorganizer variables; Model 3 contains the complete equation.

TABLE 1

Logit Estimates of First Contract Determinants[a]
(Standard Errors in Parentheses)
Dependent Variable: Contract (Mean = .68)

Variable	Model 1	Model 2	Model 3	Partial Derivative
Intercept	−3.81 (8.12)	2.61 (1.74)	−5.97 (16.03)	
Machiavellianism	−0.07** (0.03)		−0.13** (0.06)	−.03
Self-monitoring	−0.05** (0.03)		−0.26** (0.12)	−.06
Rigidity	−0.01 (0.02)		−0.13* (0.08)	−.03
Upwardly mobile	2.43** (1.21)		8.17** (3.86)	.32
Downwardly mobile	1.59 (1.52)		6.30** (3.04)	.32
Age	0.03 (0.09)		0.15 (0.14)	
Race	2.07* (1.55)		2.29 (3.20)	
Education	0.90*** (0.31)		2.42*** (0.88)	.28
Organizing experience	0.05 (0.10)		0.15 (0.19)	
Union experience	0.05 (0.06)		0.07 (0.11)	
Rank-and-file	−1.57 (1.39)		0.79 (2.94)	
Coalition	−4.32*** (1.57)		−13.02*** (4.63)	−.68
Petitions	−0.80 (1.18)		−3.65 (2.37)	
Secret	−2.04** (0.96)		−1.41 (2.24)	
Home visits	−0.22 (1.53)		0.01 (0.03)	
Committee	0.02 (0.02)		0.10** (0.04)	.02
Contact	0.97 (1.91)		−0.01 (0.04)	
Percent vote		0.02 (0.02)	0.25*** (0.11)	.05
Board-ordered election		−0.40 (0.47)	−1.37 (2.26)	

TABLE 1—(*Continued*)
Logit Estimates of First Contract Determinants[a]
(Standard Errors in Parentheses)
Dependent Variable: Contract (Mean = .68)

Variable	Model 1	Model 2	Model 3	Partial Derivative
Consultant		−0.97°°	0.25	
		(0.51)	(1.68)	
Delay[b]		−0.12	0.24	
		(0.18)	(0.47)	
ULP		−0.42	−3.22°°	−.60
		(0.56)	(1.86)	
Refusal		−1.34°°	−6.17°°	−.67
		(0.77)	(3.29)	
Unemployment rate[b]		−0.24°°	0.18	
		(0.10)	(0.41)	
−2 (log-likelihood ratio)	75.59°°°°	126.64°°°	34.40°°°°	
N	113	116	107	

°p < .10
°°p < .05
°°°p < .01
°°°°p < .001

[a] Parameter estimate and standard error are multiplied by 100 to facilitate presentation of the results.

[b] Tests on theoretically important variables are one-tailed; tests on control variables are two-tailed.

Space limitations prevent a discussion of the first two models. In the third model, as predicted, the coefficients on *Machiavellianism*, *Self-Monitoring*, and *Rigidity* are negatively and significantly associated with the probability of securing a first contract, although the latter coefficient is significant only at the p < .06 level. *Upwardly Mobile* and *Downwardly Mobile* organizers appear to significantly increase the probability of a first contract. Although *Age*, *Race*, *Organizing Experience*, *Union Experience*, and *Rank-and-File* status do not influence the probability of a first contract, there is a significant positive relationship between *Education* and the dependent variable, as predicted.

A surprising result is that *Coalition*-building by the organizer appears to have a dramatically large negative effect on the probability of a first contract. This result should be interpreted with caution, however. It is likely that organizers build coalitions with other community, religious, and labor groups when they face a great deal of resistance from management. If this is true, and if the measures of managerial resistance included in the model do not perfectly measure that construct, then the coalition variable would be biased. Therefore, the negative sign of the coalition variable may be caused by misspecification in the model. However, there is a significant positive relationship between participation in the organizing *Committee* by the workers and the probability of a first contract. No support was found for the hypotheses concerning *Home Visits* and *Contact.*

In the category of other campaign variables the coefficients on *Percent Vote* received by the union in the election, *ULP* charges filed by the union, and *Refusal* to bargain by management possessed the hypothesized signs; all coefficients were significant at conventional levels. The probability of a first contract appears to increase as the union's *Percent Vote* increases, and the probability appears to decrease in the presence of *Refusal* to Bargain and *ULP* charges filed by the union. The hypotheses concerning *Board-Ordered Election, Consultant,* and *Delay* found no empirical support.

The partial derivatives provide a measure of the magnitude of the effect of each independent variable on the probability of a first contract being signed holding all other variables constant. A one-unit increase above the mean in the *Machiavellian* and *Rigidity* scales results in a three percent reduction in the probability of a first contract. A one-unit increase in the *Self-Monitoring* scale reduces the probability of a first contract by six percent. The presence of an *Upwardly Mobile* or *Downwardly Mobile* organizer yields a very large, 32 percent, increase in the probability of a first contract. Each additional year of *Education* above the mean results in a 28 percent increase in the probability of a contract.

The derivative associated with *Coalition*-building by the organizer must be interpreted with caution. Each one percent increase in *Committee* participation by election unit members increases the union's chances of obtaining a first contract by two percent. Likewise, each one percent increase in the *Percent Vote* obtained by the union in the representation election increases the probability of a first contract by five percent. Finally, campaigns in which *ULP* and *Refusal* to bargain charges were filed by the union experienced a decline in the probability of securing a first contract by 60 and 67 percent, respectively.

Since the particular union may affect the probability of a first contract, Model 3 was reestimated with union dummy variables as controls. These results were entirely consistent with those reported in

Table 1, except that the significance level on *Downwardly Mobile's* coefficient was reduced from $p < .02$ to $p < .09$. All other variables retained their previous sign and remained significant.

Discussion

This study builds on Cooke's (1985a, 1985b) work by developing a model that incorporates characteristics and campaign practices of the union organizer. This model suggests that managerial resistance to signing a first contract is influenced by the organizer and the organizer's campaign practices.

This study suggests that labor unions should place increased emphasis on recruiting and selecting individuals for organizer positions. Interviews with the director of organizing of the eight participating unions indicated that union officials do not have well-established criteria for selecting organizers. For many unions, union activists work their way up from local union positions, to intermediate bodies, and finally to international headquarters. Personal recommendations and interviews are important sources of information in the selection process for many unions. This study, however, points to a number of characteristics that appear to be associated with successful organizing, in this case, the organizing of an election unit that yields a first contract. By hiring better-educated, socially mobile individuals who possess the personality characteristics discussed in this paper, unions may greatly increase their chances of gaining first contracts. Without diminishing their militant commitment to workers' rights, union organizers who are perceived by managers as being similar to themselves, reasonable, honest, and fair may have a better chance of both winning a representation election and laying the groundwork for the successful negotiation of a first contract. In other words, when considering determinants of first contracts, nice guys don't always finish last.

Further, these results indicate that union organizers and others in the industrial relations system may play important roles in the determination of a variety of important outcomes. The stream of research from which the study emanates suggests that union organizers help determine not only first contract outcomes, but also prounion votes and victories in representation elections (Reed, 1989a) and whether organizing drives terminate in elections or abandoned campaigns (Reed, 1989b). Thus, union organizers are an important human resource who deserve further study.

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Endnote

[1] The participating unions are the Graphic Communications International Union, the International Brotherhood of Electrical Workers, the United Mine Workers Union, the United Steel Workers Union, the Service Employees International Union, the New York State Nurses Association, the International Brotherhood of Teamsters, and the Hotel Employees and Restaurant Employees Union.

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Hostile Environment Sexual Harassment: From What Perspective Should Arbitrators Judge?

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With the emergence of sexual harassment as a legally recognized, major new category of sex discrimination, analyzing how labor arbitrators have ruled in sexual harassment cases has been the subject of a number of published studies in the 1980s. The decisional framework for arbitrators has become even more complex since the United States Supreme Court's decision in *Meritor Savings Bank v. Vinson* (1986), which established full legitimacy for the "hostile environment" subcategory of sexual harassment. Using a framework outlined by Murray (1987), this paper focuses on how arbitrators should judge hostile environment claims: (1) objectively from the perspective of a reasonable employer; (2) objectively from the perspective of a reasonable person in the circumstances of the harassed person; (3) subjectively from the perspective of the particular harassed person; or (4) subjectively from the perspective of the alleged harasser?

In November 1980, the Equal Employment Opportunity Commission (EEOC) issued its "Guidelines on Discrimination Because of Sex," which provides that "unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute sexual harassment when . . . such conduct has the purpose or effect of unreasonably interfering with an individual's work performance or creating an intimidating, hostile, or offensive working environment." (EEOC, 1980) Since publication of the Guidelines, federal courts have shown them the deference customarily accorded to enforcement agencies. According to *Vinson*, the accused harasser's "unwelcome" conduct has to be "sufficiently severe or pervasive" as to create "an abusive working environment." But how should "sufficiently severe or pervasive" and "abusive" be analyzed? Whose

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perspective on the conduct should be used? Do judges and arbitrators use different analytical frameworks?

Analyzing court decisions in hostile environment claims both before and after *Vinson*, Murray suggests that the two subjective standards are inappropriate because one would fail to eliminate abusive work environments and the other would encourage frivolous lawsuits based entirely on individual, subjective perceptions. He identifies pre-*Vinson* lower court decisions in which actionable sexual harassment was found even though the alleged conduct was not severe, pervasive, or abusive because, in his view, an inappropriate analytical framework was used. Murray also argues that an objective, reasonable employer perspective would be difficult to define and might virtually eliminate valid hostile environment claims. Instead, he urges adoption of an alternative objective criterion: a reasonable person in the situation of the victim.

For cases involving unwanted physical contact, overt demands for sexual favors, or abusive conduct, Murray maintains that the severe, pervasive, and abusive standards are legitimate and adequate. For cases not involving such conduct, usually such situations as the use of sexually explicit language or display of sexually explicit materials like photographs or cartoons, Murray argues that the conduct would have to be found to be offensive to a reasonable, prudent person in those particular work circumstances and have the effect of changing a previously abuse-free environment to an abusive one. In his view, Title VII "was not meant or designed to change certain work environments wherein vulgar language, sexual jokes, and offensive conversations may abound. In these circumstances one who enters such a work force has consented to the existing environment." (Murray, 1987)

Analyzing arbitration decisions not long after publication of the EEOC Guidelines, Greenbaum and Fraser (1981) found that unlike court cases, which generally had been based on claims brought by female victims of male alleged harassers, arbitration cases typically were union grievances filed on behalf of male alleged harassers, complaining that disciplinary action taken by the employer was not for just cause:

> It is noteworthy that while the courts have been concerned with whether particular words or conduct are sufficiently coercive to constitute sexual harassment in violation of Title VII, arbitrators generally have not dealt with this discrimination issue, but rather considered whether

> the behavior complained of constitutes sexual misconduct inappropriate to the workplace and therefore just cause for disciplinary action. Thus, the focus of the two forums has been different. (Greenbaum and Fraser, 1981)

Seven years later, Nowlin (1988) found only four published arbitration decisions involving the victim as the grievant, none of which was a hostile environment case. But in those published cases in which the alleged harasser was disciplined for creating a hostile working environment, Nowlin's findings directly contradict the perspective urged on judges by Murray:

> Arbitrators have rarely reversed a decision of management to discipline a grievant for creating a hostile, intimidating, or offensive environment by telling sexual jokes, making sexual remarks, displaying sexually oriented pictures, or using certain types of vulgar language.
>
> Some grievants have used as a defense that it was common in the workplace to use dirty and/or sexual language. Yet arbitrators, finding that such behavior can negatively affect the victim's ability to perform her duties, have not accepted it as a defense. (Nowlin, 1988)

As a workplace offense for which discipline might be levied, hostile environment sexual harassment raises classic questions of the appropriate framework for arbitral analysis. For example, there is the general principle that the arbitrator's task is to interpret the contract "within its four corners" and not to interpret or apply external law. But since typical contract language simply prohibits discrimination based on sex, only rarely with express recognition of sexual harassment much less hostile environment, how is the scope of prohibited behavior to be determined? When an employee has been disciplined for creating a sexually hostile environment, should an arbitrator analyze the facts by using the severe or pervasive and abusive tests arising from the *Vinson* court's application of the Guidelines? Or, should an arbitrator take the view that the alleged sexual harassment is simply one particular form of the general offense of conduct inappropriate to the workplace? From this latter perspective, prohibiting hostile environment sexual harassment would not necessarily require a specific contract clause. The ultimate source of management authority would be the inherent right to discipline and the management rights and just cause provisions of the contract.

Since different decisions can result from the adoption of differing views of arbitral authority as well as from differing analytical frames of reference, it is useful to identify the extent to which arbitrators have utilized EEOC Guidelines and court decisions in hostile environment sexual harassment cases and to identify from which viewpoint arbitrators have judged the allegedly harassing conduct. A comprehensive inventory of the cases cited in the literature and a thorough search of sources of published arbitration decisions (Bureau of National Affairs, Commerce Clearing House, the Labor Arbitration Information Service, and the American Arbitration Association) yielded a total of 28 published decisions between 1978 and 1988 involving hostile environment situations. Not all of the 28 identify the offense explicitly and two actually precede the 1980 EEOC Guidelines, but all of the 28 involve fact situations that constitute what is now recognized as hostile environment sexual harassment. Four of the cases involve atypical situations, including two of harassment directed at clients or inmates, rather than co-workers, and two of harassment directed at co-workers for alleged homosexual orientation. Twenty of the decisions (71%) have been published since 1985.

In 27 of the 28 cases, the contractual issue was just cause for discipline; only one published decision was found in which the grievant was a victim of alleged hostile environment harassment. In 21 of the cases (75%) the actual charge against the grievant was sexual harassment and in 17 of the cases (61%) the penalty levied was discharge while in the remaining 11 cases (39%) it was suspension. Of the eight cases (29%) in which discipline was reversed or modified, three discharges and one suspension were overturned and one discharge and three suspensions were reduced. The remaining 13 discharges and seven suspensions were sustained. In half of the decisions the arbitrator analyzed the hostile environment claim primarily from the perspective of a reasonable employer and in the other half primarily from the perspective of a reasonable person in the situation of the victim (Table 1).

It does appear that there is some greater tendency to evaluate the facts from the standpoint of a reasonable person in the victim's situation in discharge cases, when the grievant's job is at stake, than when the discipline levied was a suspension. But the cases are otherwise distributed so evenly between these two dimensions that it is not possible to generalize about any distinctions in the discipline assessed or in its disposition by the arbitrator based on the analytical perspective used. Moreover, a detailed examination of the decisions

TABLE 1

Analytical Perspective of Arbitrator

	Reasonable Employer	*Reasonable Victim*
Discipline Levied	14 (50%)	14 (50%)
Discharges (17)	7 (41%)	10 (59%)
Suspensions (11)[a]	6 (55%)	5 (45%)
Disposition of Discipline		
Overturned (3)	1 (33%)	2 (67%)
Supported (20)	9 (45%)	11 (55%)
Reduced (5)	3 (60%)	2 (40%)

[a] In one case analyzed from a reasonable employer perspective, when a harassed employee expressed her disapproval of the written warning plus counseling penalty given to a co-worker for making sexually suggestive comments to her, the employer then levied a five-day suspension. An arbitrator overturned the suspension as not for just cause for reasons of double jeopardy.

reveals no discernible pattern of explanation for why some arbitrators chose one perspective and some the other.

Further, in the 14 cases in which the arbitrator analyzed the hostile environment charge from the perspective of a reasonable employer to judge whether the discipline was for just cause, seven arbitrators (50%) utilized legal definitions of hostile environment drawn from the case law or EEOC guidelines and seven (50%) did not. In the 14 cases in which the arbitrator used the perspective of a reasonable person in the victim's situation, 11 arbitrators (79%) utilized specific legal definitions and three (21%) did not. These results reflect the difference in the judicial and arbitral forums. If an arbitrator analyzes the facts from the viewpoint of a reasonable person in the victim's situation, there is a very practical need to define with some precision why the alleged conduct was, or was not, found to create a hostile environment for that person. Hence, the recognized legal standards are highly utilitarian and have a high degree of acceptability. On the other hand, if an arbitrator analyzes from the perspective of a reasonable employer subject to just cause standards, then specific, legal definitions are not so highly utilitarian and the alternative contractual standards governing management rights and just cause have an equally high degree of acceptability.

That hostile environment sexual harassment charges filed under Title VII should utilize an analytical perspective based on a reasonable person in the situation of the victim, as Murray argues, is legitimate, particularly given the emphasis in EEOC Guidelines upon unwelcomeness as a test and the Supreme Court's legitimization of that standard in *Vinson*. The right not to be discriminated against in employment on the basis of one's sex is secured for an individual in the statute. Similarly, it is both legitimate and practical for an arbitrator hearing a case in which the grievant is the victim of alleged hostile environment discrimination to use that same perspective since the contract protects bargaining unit members from discrimination.

But in the far more typical hostile environment case reaching arbitration, where the grievant is an employee who has been disciplined for creating a hostile environment, the arbitrator's analytical perspective should be that of a reasonable employer subject to just cause. The contractual requirements are that the employer discipline only for just cause and that the employer exercise management rights without violating the agreement. It is the employer's actions which are subject to testing in the just cause case, not the victim's perceptions of alleged harassment, and the employer bears the burden of proof. The victim's perceptions of the alleged actions and circumstances are simply evidence in the overall just cause consideration. Murray's reservation about a reasonable employer standard in Title VII litigation is not valid in the labor arbitration setting, where the employer is subject to the substantial body of widely acknowledged interpretive principles which have come to constitute the concept of just cause.

Even more importantly, it is the employer who is liable, under the EEOC Guidelines, for taking "immediate and appropriate corrective action" and for "developing appropriate sanctions" (EEOC, 1980). And the employer will not likely know whether sanctions levied are sufficient to meet a still-developing legal obligation until long after the disciplinary decision is made and any arbitration award concerning it is issued. An employee dissatisfied over the discipline given by the employer to fellow employees for creating a work environment hostile to her has at least 180 and perhaps as long as 300 days just to file a charge of sexual harassment against the employer. In addition, *Vinson* leaves open the possibility that an employer might be insulated from at least some co-worker sexual harassment liability if an effective procedure for handling harassment complaints is in place. (*Meritor v. Vinson*, 1986, at 63) At least one of the measures of effectiveness will certainly be the discipline resulting from meritorious claims.

As Monat and Gomez (1986b) observe, once sexual harassment is found, two issues central in the arbitration forum remain open after *Vinson*: whether the employer must discipline the harasser to avoid legal liability and whether the employer may impose discipline more severe, including discharge, than might be required simply to halt the sexual harassment. Clearly, an employer's consideration of potential legal liability would be a legitimate factor in the evaluation of disciplinary alternatives within just cause standards. Agreeing with Nowlin's findings, Monat and Gomez (1986a) conclude on the basis of their research using published awards that arbitrators "give employers broad discretion and routinely uphold discharges even where, for example, it appears a warning or suspension may have stopped the harassment." An employer concerned with such just cause factors as even-handed discipline, notice, and consistency must respond to individual offenses not just as discrete incidents but also as opportunities and responsibilities to define disciplinary policy as an expression of the management right to direct the work force. The employer must act knowing that the policy may be subject to review in court as well as in arbitration.

While these are knotty problems, the variance in arbitrators' analytical perspectives and in their inconsistent use of legal definitions in some instances and more general notions of employee misconduct in others is troublesome. For both advocates and arbitrators, a failure to reflect on the effects of differing analytical approaches or to make deliberate, informed, and express choices in developing theories of the case does a disservice to all involved. The public policy goal of prohibiting workplace discrimination based on sex and the practical utility and acceptability of arbitration to the parties will both be best advanced if arbitrators adopt an objective reasonable employer standard, applied in the context of just cause, as the best perspective from which to evaluate grievances over discipline for hostile environment sexual harassment.

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DISCUSSION

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Motohiro Morishima presents evidence on how Joint Consultation Committees influence wage outcomes in Japanese collective bargaining. Relying on a sample of 97 bargaining pairs, he finds that information sharing and consultation result in lower initial union demands, shorter negotiations, and lower wage settlements, but not in fewer rounds of negotiation. Motohiro then concludes that since consultation is associated with lower wage settlements, after holding firm profits constant, the firm captures most of the benefits when it engages in information sharing. Therefore the function of these joint committees is to bring the union's expectations into alignment with management's goals. From this standpoint, information sharing is a tactical reframing exercise, where management provides substantive information, but more importantly by using the information, management is able to shape the agenda, frame the issues, and reduce union expectations. Does his research support this conclusion?

There are some plausible alternatives to this explanation. First, we cannot assume that joint consultation committees are exogenous to wage setting. If, as in the United States, joint consultation comes about in the context of concessionary bargaining, does past wage restraint predict future wage moderation? Or, does management engage in joint consultation with weaker parties, not fearing their ability to capture rents, and providing the union leadership an incentive not to increase their militancy or improve their bargaining position.

Second, because wage negotiations are prospective, management is sharing information about future firm performance. If a firm's prospects are poor, then wage moderation can be expected to result from these discussions. American management is usually eager to share financial forecasts when it provides them with an advantage in negotiations and is obligated to open its books when it argues inability to pay or that the union demands would render the firm uncompeti-

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tive. This alternative explanation suggests that the control variables, such as current profitability or industry performance, are inadequate, since negotiations are prospective.

Since joint consultation does not reduce the number of bargaining rounds, I am not sure that reducing the duration of negotiation or lowering initial wage demands is important to the bargaining process. The function of blue sky proposals in negotiations is to test resistance points and targets and to shape a convergence process. The results indicate that some of the explorations of the early stages of negotiation are being accomplished in the joint committees. This may suggest that these committees are simply an adjunct to negotiations, as suggested by Morishima.

The Thomas and McPherson paper addresses the problem of how an arbitrator should decide a grievance brought by an employee who has been disciplined for sexual harassment. Specifically, they ask what standard should be used to determine whether sexual harassment occurred in a grievance involving an employee disciplined for perpetrating sexual harassment: (1) a reasonable employer standard or (2) a reasonable person in the victim's situation? A sexually harassed employee under Section 703 of Title VII has the right to demand from management that the workplace be free of sexual harassment that interferes with her performance or creates a hostile work environment. A sexually harassed employee can file a complaint at the EEOC, where the standard of proof is a reasonable person in the victim's situation would view the activity as harassment. Meeting this standard would sustain a charge against the employer for failing to provide an environment free of sexual harassment. The authors found only one grievance of this type that was arbitrated.

The other 27 grievances involved employees grieving discipline that was imposed on them because they had allegedly engaged in sexual harassment. These grievances are against management, not the harassed bargaining-unit employee. The central issue is whether management acted with just cause in disciplining the grievant. The grievance charges that either the facts of the case do not warrant discipline or that the discipline is inappropriate. The just cause standard places the burden of proof on management and requires it to meet a series of tests. The first question the arbitrator needs to answer is whether the alleged misconduct has been proved satisfactorily.

At issue is what perspective the arbitrator should use to determine if the misconduct occurred. In half of the 28 arbitration cases, the arbitrators analyzed the claim from the perspective of a reasonable employer, while the other half imported the EEO standard, adopting the perspective of a reasonable person in the situation of the victim. This latter perspective was used more frequently when the grievant's job was at stake, but there appears to be no systematic variation in outcome based on perspective. The study has discovered a distinction without a difference. Perhaps if the arbitration cases are further analyzed to examine the precise questions the arbitrators are seeking to answer, they could demonstrate why the distinction between perspectives results in no substantive difference. The authors could use a content analysis of the decisions, permitting the cases to sort out on an inductive set of different criteria, which may show the source systematic variation in these cases.

Tom Reed provides us with an addition to his study of "Union Organizers and Representation Elections Outcomes." His current article focuses on whether attributes of union organizers influence whether they can sign first contracts after successfully winning a representation election. Prior research indicates that between 1 out of 4 or 1 out of 3 election victories are not translated into union contracts.

Reed's study presumes there is sufficient interaction between management decision makers and union organizers and that the personal attributes of the organizer can influence a manager's judgment about the union. Since many managers have well-developed role expectations about "union-types," one would expect that it would require a significant experience to create the necessary role imbalance to cause a manager to change his or her perception of the union; I do not believe there is sufficient interaction between organizers and management to bring about such a dramatic shift in perspective.

Reed's prior research indicates that Machiavellianism and Coalition building increased the likelihood of winning the election, but we now find that they increase the likelihood of not signing the first contract. The choice for the union is when do they prefer to lose.

Reed suggests that we should not take his coefficient estimate on Coalition too seriously; that it may be plagued by measurement error. However, I find it to be one of the more important results in his paper. Why do unions choose to build a community coalition during an organizing campaign? Usually, when the employer has attacked the basic legitimacy of joining a union. The community coalition is used to show the bargaining unit employees that respected members of the community support unionism. The large and significant coefficient on Coalition suggests that even where unions win elections against employers who attack the basic legitimacy of unions, they will be unable to secure first contracts. I believe this is an important finding.

DISCUSSION

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"Information Sharing and Collective Bargaining in Japan: Effects on Wage Negotiations" by Motohiro Morishima

Professor Morishima's paper is important in three respects. First, it contributes to the negotiations literature by linking bargaining process and outcome data to information sharing. Second, it presents primary data on bargaining in Japan, which we see too little of in this country. Third, it tests two competing theories, both of which have proponents in the literature—which is a nice illustration of what social science is all about.

The main finding is that an increased level of information sharing is associated with shorter negotiations, tempered demands, and modest settlements—with the caveat that these effects may moderate or even reverse under very high levels of information sharing. It is further noted that such an outcome means different things to labor and management.

The reduced bargaining time, tempered demands, and lower final settlement are all interpreted as evidence of a "goal alignment" model of negotiations, which contrasts with the "residual claimant's" model but which is fully consistent with more cooperative forms of negotiations (Fisher and Ury, 1981). However, the same data could also be characteristic of financial hardship where the parties are just being realistic. Control variables that might pick up such a pattern were included, but not reported; I would be interested to know if there is any link here. The underlying point is that it is important to know not only how much information sharing there is, but also what is being said (is it good news or bad news?).

If we knew more about the content of the information sharing, we might also be able to learn more about why there is variation in the level of information sharing. Another control variable—the previous settlement level—might be instructive here.

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Finally, two questions regarding generalizability should be noted. First, is there anything distinctive about bargaining in 1981 in Japan? Second, how do we reconcile an opposite finding in support of the residual claimant's model in the U.S.? My own reaction is that information sharing means different things in different contexts. In a highly integrative set of relations, information sharing becomes a critical tool for further problem solving; in highly distributive relations, the information sharing becomes additional ammunition. In this sense, the bargaining context provides a frame of reference that then gives meaning to the information sharing.

"Nice Guys Don't Always Finish Last: The Impact of the Union Organizer on the Probability of Securing a First Contract" by Thomas Reed

Professor Reed presents evidence to suggest that the personal characteristics and organizing strategies of union organizers have a direct impact on a union's ability to successfully negotiate a first contract. The point is both sensible and important. Why therefore, has it not been the subject of prior research? Part of the answer lies in the difficulty of collecting data on the issue, and Professor Reed is to be commended for his ingenuity in this regard. But the answer goes further—just as the activities of organizers frame subsequent actions, it may be that the institutional roots and egalitarian values that permeate our field fail to encourage research about how individuals may matter.

There are a few minor points that I would like to note about the paper. First, it would help to know how the respondents who returned both surveys compare to the larger pools of individuals who returned just one survey—to eliminate one possible area of response bias. Second, it would help to know more about the organizing success of the "nice guys"—they may do a better job of setting the stage for subsequent negotiations, but are they appreciably worse (or better) at building the stage in the first place? If they have fewer election victories, then the union must strike a delicate balance; if they have the same or a greater number of wins, then a union's preference should be clear.

A direct implication of the analysis does, however, raise a troubling normative issue. That is, given the evidence to suggest that certain psychological attitude scales and personal characteristics (such as social similarity to managers) are useful predictors for eventual success in getting final contracts, should unions consider such factors in hiring organizers? To some, it would seem obvious that a union ought to seek out the individuals most likely to assure their organizational success.

To others, this would be tantamount to the church turning away people who feel the calling to serve because they don't fit the right psychological profile.

"Hostile Environment Sexual Harrassment: From What Perspective Should Arbitrators Judge?" by Dirk Thomas and Donald McPherson

This paper suggests that an arbitrator's frame of reference matters, and that, in the particular case of hostile environment sexual harassment, the perspective of a "reasonable employer" makes more sense than the perspective of a "reasonable victim." The normative argument is a strong one. Most arbitration in this area involves the disciplining of individuals accused of harassing others rather than charges of harassment by victims (which, by the way illustrates how different forums for dispute resolution may attract different types of disputes). Professors Thomas and McPherson argue that, in such a situation, the arbitrator's task is to determine if the employer has met its burden of proof in demonstrating that it had just cause for its actions. I am sympathetic to this argument, though I must note that the arbitrator always operates within the four corners of the contract, and I am aware of at least one instance where the contract language specifically defines sexual harassment as any behavior considered inappropriate by the woman and rejected by her (clearly as subjective victim perspective).

While I share the authors' assessment of the importance of frames of reference and generally agree with the authors' position, I find the empirical evidence curiously separate from the normative argument. I will not pursue issues about the representativeness of published arbitration awards, though these are real issues, nor protest the problems inherent in drawing inferences from the small number of cases (28) that constitutes most of the published cases, though the authors should address this limitation.

The authors classify the frame of reference of the arbitrators into two camps—the reasonable employer approach and the reasonable victim approach. My first question may reveal my naivete; it concerns just how this classification was done. Do arbitrators explicitly state their perspective (and is there evidence to suggest that they indeed operate from that perspective)? If not, what are the cues? The material should be presented so that another researcher could replicate the classification.

Assuming, however, that the cases have been accurately classified, How do we then make sense of the finding that half of the cases (14) involve stances that are from a reasonable victim perspective? The authors examine the discipline levied and the disposition of that discipline in the arbitrator's award and find no strong pattern to explain the different perspectives or that might indicate any impact of the perspective on outcomes in arbitration. Yet, if half of the arbitrators take positions at odds with the author's normative stance, Is there an alternative logic to justify their approach? Moreover, if there is no discernible impact on the disposition of the discipline, Does the different perspective matter in some other way or is the frame of reference not really important?

In essence, the empirical evidence seems to undermine the authors' main proposition. Assuming we can accept the authors' classification and even if a textual analysis of decisions written from one perspective or the other revealed interesting contrasts (as I'm sure it would), the bottom line finding remains the same—the frame of reference doesn't really seem to matter in how an arbitrator resolves a case. The authors approach the data purely from a normative perspective—they call for more consistency around the reasonable employer perspective. From a positive perspective, however, the data seem to raise a broader question as to whether the contrasting perspectives really matter.

Frames of Reference in Industrial Relations

The idea of frames of reference has been the focus of a great deal of research in the fields of social psychology (Nisbet and Ross, 1980) and organizational decision making (Allison, 1971). While there is very little consideration of framing that occurs at an institutional level of analysis (Douglas, 1986), the issue does stand as a common theme of all three papers.

In a narrow sense, we learn from Professor Morishima that the benefits of increased information sharing in collective bargaining depend on whether you approach the question from a union or management perspective. Moreover, the contrast between Morishima's findings in Japan and the findings of others in the U.S. may suggest that high trust versus adversarial contexts provides very different frames of reference for interpreting information sharing—in one case the information becomes a critical tool for problem solving and in the other it becomes a weapon for escalating conflict.

From Professor Reed we learn that the interactions of a union organizer impact on the subsequent negotiation over a first contract.

In a narrow sense, the lesson is that individuals matter. In a broader sense, we see the practical and theoretical value of examining how past events serve to frame future events.

Finally, from professors Thomas and McPherson we see a case where there is a strong normative argument in favor of arbitrators adopting a particular frame of reference, but there is evidence that such a frame of reference has little impact on the outcome in arbitration.

These papers examine a diverse set of additional framing issues in our field, which merely whets my appetite (and I hope yours) for more research into the sort of framing that occurs at an institutional level of analysis.

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XXI. WORKFORCE 2000: A HUMAN RESOURCE PERSPECTIVE

Workforce 2000: Compensation Implications

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As the year 2000 approaches, organizations are facing fundamental changes in their environments that demand new and innovative methods of workforce management. The development of compensation systems that are compatible with evolving workforce management systems represent a particularly challenging demand. Compensation costs in most organizations represent a sizeable proportion of total cost and must be managed effectively to remain competitive.

Many have taken the time to step back and attempt to look into the future and see what it may bring. Many such analyses have presented implications for human resource management in general and compensation management in particular. Two main trends stand out, however, in that they may occasion fundamental changes in the way compensation is managed. The first involves changing organizational forms for work. More flexible organizational structures will require that the concept of a job as a stable set of tasks give way to a more fluid conception of job. The second factor relates to the predicted demographics of the workforce in the year 2000 and beyond.

Changing Organizational Forms For Work

Production-related trends in the early part of this century,

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including mass production and scientific management, resulted in large quantities of items of a standardized nature produced at low cost. Organizations adopted structural forms suited to attaining this end. The structural form adopted was designed, to the extent possible, to shield production jobs within organizations from environmental influences that produce uncertainty. The ability to define jobs that involved a stable set of tasks over time requiring defined skills was viewed as resulting in maximum efficiency.

As we near the end of this century, however, a variety of forces are resulting in organizations adopting structural forms that do not have as an objective the insulation of jobs within the organization from environmental uncertainty. Instead, a more fluid conception of job is increasingly being seen as a way to cope with environmental uncertainty.

Technology and competition are producing organizations that are more lean and flexible, with a "dynamic network" model replacing traditional organizational structural forms (Miles, 1989). The concept of "flexible specialization," as opposed to mass production, is seen as a way for organizations to compete in a 21st century world economy (Piori and Sabel, 1984). Specific changes, including small batch production of varied similar lines, the need for speedier responses and more client responsiveness in the growing service industry, all necessitate an organization that is highly adaptive. A movement away from the concept of job as a defined and stable set of tasks over time is one way to increase flexibility and adaptiveness.

While changing organizational forms for work constitutes a fundamental basis for organizations to redefine their concepts of job, other forces are serving to facilitate this movement. On balance, workers have so far reacted favorably to job design, which is a technique to increase the scope, autonomy, and responsibility of jobs. Unions have in many cases been supportive of job design efforts (though some still resist) (Kochan, Katz, and McKersie, 1986). In a similar vein, management will increasingly see job flexibility as a way to break the we/them attitude in the workplace and perhaps also as a way to avoid unions or deal with them more effectively (Kochan et al., 1986). And finally, projected labor force skill shortages, to be discussed more fully in a later section, will necessitate that a reduced workforce (in numbers) be multiskilled so as to be better able to handle demand.

Effects of Job Fluidity on Compensation Practice

Human resource management procedures in this century have focused primarily on the job as the basic unit of analysis (Ash, Levine, and Sistrunk, 1983). In the compensation context, jobs are the basis of job analysis, from which job descriptions are produced. Job descriptions, in turn, provide the basis for two criteria on which compensation is set: job evaluation and labor market surveys. These two procedures constitute the fundamental framework on which organizational wage structures are built.

In addition to job, however, two other bases for compensation payment can be distinguished: performance and person (Mahoney, 1989a). Performance compensation is best represented by merit adjustments and the assorted incentive plans found in organizations. Examples of person-based compensation include seniority pay and skill-based pay.

Job-based compensation inherently requires that jobs be readily defined and stable over time. Job evaluation is a procedure that evaluates the relative worth of a position to the organization. As such, the parameters of the job must be clearly stated. Absent a clear definition of the job, opportunities for bias and subjectivity are present, weakening the acceptance of job evaluation results by the workforce. Labor market surveys likewise require a clear definition of the job in order to effectively complete the process of matching the job with equivalent ones in other organizations. The inability to appropriately conduct the job matching process is a significant liability in the use of wage surveys (Rynes and Milkovich, 1986).

A result of the projected increase in the fluidity of jobs, therefore, will be greater reliance on the performance and person as bases for compensation. Several more specific changes in compensation practice can be predicted.

Diluted Grade Structures. A dilution of the traditional grade structure now common in organizations will need to occur. Rigid, narrow pay grades, with defined minimums and maximums, inherently imply bureaucracy and constraints on compensation decision making (Lawler, 1987). Bureaucratic procedures are well-suited for mass-production technologies, when decision making is best centralized at top levels of the organization and rigid rules limit discretion at lower organizational levels. As jobs become more fluid in response to environmental demands, compensation decision making cannot feasibly be as rule-oriented. More discretion will be given to lower hierarchical levels within the organization. This could manifest itself in a substantial reduction in the number of pay grades, with wider ranges associated with each. As is now commonly the case, performance and person bases of pay will still determine position in the compensation range. With wider ranges, however, performance and person will increase in relative importance.

Innovative and Customized Team Incentive Plans. As production becomes less standardized, the need for flexibility requires not only fluid jobs, but groupings of such jobs in teams (Kochan et al., 1986). Team production is normally thought of in the context of matrix organizations. But teams are increasingly being relied upon in varying contexts to produce high-quality customized production or service with rapid response time (Business Week, 1989).

Group incentives, particularly so-called gainsharing plans, are also receiving increased attention. Though some plans have existed for many decades (e.g., the Scanlon Plan), the need in the future will be for plans that are more customized to specific situations. Not only may teams be required to work on projects of a varied nature, but it is reasonable to assume that teams themselves may become increasingly fluid within organizations, with team members shifting among teams as the circumstance requires.

In the context of team-oriented production, organizations must face the challenge of developing incentive systems that match the dynamic nature of work. Compensation managers will be less concerned with market pay rates and the content of individual jobs as bases for pay, as with reasonable yet challenging team performance targets. As team projects or content shifts, performance goals may need to be recalculated. Dynamic incentive systems of this nature will require compensation analysts and line managers that possess the necessary expertise. As with individual goal-oriented performance systems (e.g., management by objectives), organizations must commit themselves to the upkeep of the team incentive system, and be willing to modify it as conditions may warrant.

Innovative and Customized Person-Based Plans. Despite the current and projected future popularity of group incentive plans, it is unlikely that the American worker will ever lose the desire for individually based pay. Analyses that argue for the adoption of certain Japanese management styles do not necessarily recommend group-based pay (Ouchi, 1981).

Compensation based on individual performance is not desirable or feasible in many circumstances. When teamwork and cooperation are essential to the completion of a task, individual incentive plans may produce destructive competition among individuals. Additionally, it may not be possible to measure individual contribution in such situations. Performance-based compensation also may not provide enough incentive for individuals to invest time and effort in the acquisition of new skills. In a workplace of fluid jobs and teams, it is essential that workers continue to broaden their base of skills.

Compensation based on the skills possessed by the person, instead of the performance of the person, represents an ideal alternative when jobs must be flexible. Though skill-based pay has been common in many occupations (e.g., teacher, scientist), only recently has the concept caught on in other work settings. In skill-based systems, individuals are typically compensated on the basis of the number of skills they possess. Individuals are compensated to master as many skills as possible, providing incentive to become adaptive and useful in team situations.

Predictably, one major limitation to the use of skill-based pay is the definition and measurement of job-relevant skills. Skill-based pay has been used most in situations in which it is relatively easy to directly measure skill (e.g., assembly line work), or when educational attainment directly pertains to job ability (e.g., scientist). For skill-based pay to reach its potential as a compensation device, it will be necessary to precisely define and measure job-relevant skills in a wider variety of jobs. Though in one sense this may appear to be a formidable task, it should be noted that procedures for measuring the worth of jobs (e.g., job evaluation) to the organization currently enjoy wide acceptance. In principle, it should be no more difficult to develop standards of worth directly related to the person rather than to the job.

Less Organizational Focus on External Equity. The most common unit of analysis in the labor market is the job. When surveying the labor market, organizations gather compensation data on jobs, not individuals performing jobs. As jobs become more fluid, more work is performed in teams, and as work becomes more tailored to the specific needs of customers, it will be less possible to use the market as a measure of worth (Mahoney, 1989b). In effect, jobs as stable bundles of tasks will be less common, and the identification of benchmark or "key" jobs will be less possible.

To the extent external equity is used to determine compensation, organizations may shift to skill, not job, as the basis of analysis. As more elaborate measures of skills are developed for use in organizations for the purpose of skill-based pay systems, so too can skills be better used across firms in labor markets. Similarly, many organizations currently use a job evaluation method, developed by a consulting firm, because the matching process with the external labor market is facilitated when the organization compares its jobs to jobs also evaluated according to the same consulting firm's methodology. For example, an organization that uses the Hay Guidechart-Profile Method has access to Hay Associates' database of jobs in the external labor market also evaluated with the Hay System.

As individuals are less able to determine their worth in the external labor market due to firm-specific skill development, attention may increasingly be focused on internal equity and the workings of the internal labor market. Organizations may increasingly hire in at only certain entry points and rely more on developing than buying required skill. As such, they may take on characteristics of "closed" as opposed to "open" human resource management systems (Mahoney and Deckop, 1986). An essential ingredient to any compensation system is communication. In marketing the pay system to organizational members, organizations will have the burden of defending the internal rationality of the pay system. In the context of fluid jobs, performance and person bases for compensation will be the most defensible in terms of employee acceptance.

Changing Workforce Demographics

A second major trend that will affect the way compensation is managed in the year 2000 and beyond is projected changes in the workforce. Specifically, labor shortages are predicted as the baby boom generation ages, and the workforce is expected to become more diverse with women, minorities, and immigrants representing the majority of entrants to the labor force in the next decade (Hudson Institute, 1987).

Labor Shortages

As a result of declining population growth, the U.S. labor force will be expanding by only 1 percent annually in the 1990s (Hudson Institute, 1987). This amount may not be enough to meet labor demand in many sectors. In addition, as the baby boom ages and leaves the workforce, replacements are not expected to possess the same levels of skill (Hudson Institute, 1987). So not only is there a projected labor shortage in numbers of workers, but in skills of workers. And at the same time, an increasing percentage of the jobs to be created in the 1990s, particularly in the service sector, will demand incumbents with high levels of skill (Hudson Institute, 1987).

Likely results of the labor shortage will be an increasing gap in the type of jobs available, presenting issues related to dual labor markets. With skilled workers at a premium, one type of job will be high-paying "flex-jobs." As discussed previously, these jobs will involve teamwork and participation, and new compensation systems will be necessary to properly motivate workers occupying these positions. The upward pressure on compensation resulting from skill shortages may provide an additional reason for emphasis on performance pay at the group level. Performance incentives have the effect of making compensation costs more variable. Costs variable on firm performance are easier to justify as the level of costs increases.

On the other hand, given the relatively large supply of low-skilled workers, firms will find it increasingly profitable to create low-skill, routine jobs. Compensation systems for these jobs are likely to resemble traditional systems in use now. As opposed to flex-jobs, compensation for these routine jobs will be heavily based on the job, with performance incentives based at the individual performance to the extent it can be measured.

There are examples today of deskilled jobs. Cashiers at fast-food restaurants need not record price when ringing up a purchase and instead need only to press the appropriate picture of the food item to be purchased. But some of the same firms (mainly the larger ones) that create deskilled jobs may be instrumental in providing skill training to its workforce in attempts to fulfill an internal demand for skilled workers at higher levels. Examples would include tuition reimbursement and in-house training programs. Such programs not only serve the purpose of generating a potential supply of skilled workers, but can be used as a recruiting device in place of immediate wages.

Increased Workforce Diversity

The workforce by year 2000 will be composed of more females, older workers, minorities, and immigrants. The Hudson Institute (1987) projected that between 1987 and 2000, only 15 percent of the entrants to the workforce would be native white males, compared to 47 percent in 1987.

The most basic compensation implication of increased workforce diversity will be the need to provide a wider variety of compensation packages. Currently, contribution, as opposed to need, is the dominant basis for compensation (Milkovich and Newman, 1987). As the workforce becomes more diverse, however, need will increase in importance as a compensation basis.

Employee benefits, the one compensation element currently based to some extent on need, are likely to continue to increase in magnitude and variety. Increases in older workers and women, especially, will result in major changes of various technical aspects of benefits (O'Donnell, 1987).

Other changes in benefits will result from the shortage of skilled workers. Since many older workers and women will possess highly desired skills, firms will take steps to accommodate specific needs and potentials of these groups. For example, pension plans today restrict mobility across firms and particularly affect older workers (Hudson Institute, 1987). Changes in government regulation and firm practice are necessary to improve the overall flexibility of the aging workforce. In addition, job retraining, currently uncommon for older workers, will also provide a way for an older workforce to meet the demands related to the previously discussed changing organizational forms for work.

For women, examples of ways to accommodate needs and potentials include child care, pregnancy leave, and flexible work schedules and location. In fact, the skill potential of females in the workforce is so great that firms are likely to develop entire compensation packages geared to women (and men) who must balance family care with employment. As such, workers (particularly highly skilled) with demanding family responsibilities will perhaps be considered as a special group for compensation purposes. Examples of special groups commonly designated today include supervisors, professionals, sales workers, middle and top management, and expatriates (Milkovich and Newman, 1987).

The decrease in the pool of skilled workers combined with increases in the fluidity of jobs in general, will produce an increasing use of subcontracting by firms. Temporary agencies that place skilled workers will proliferate. Older workers, women, and others who prefer part-time work are likely sources of skilled temporaries. Consistent with other cases, compensation for these skilled, temporary workers will, by necessity, be based more on performance and person and less on job.

Implications for Research

As jobs become more fluid, organizations will be challenged to develop compensation systems that are perceived as fair, yet less job-based. That will require significant changes from current practice. It also presents challenging opportunities for research, which, like practice, has predominantly used the job as the basis for analysis (Ash, Levine, and Sistrunk, 1983).

Skill-based pay, in particular, will continue to require research attention. Though there have been studies analyzing its overall effectiveness to the extent it has been tried (Gupta, Jenkins, and Currington, 1986), many more specific opportunities present themselves. For example, studies have not assessed the direct effect of skill-based pay on individual-level outcome variables such as pay satisfaction and job performance or its effects relative to performance and job. There have been several studies, however, analyzing the relative and absolute effects of performance and job pay (Berger and Schwab, 1980; Fossum, 1979; Heneman, Greenberger, and Strasser, 1988; Motowidlo, 1982). As more organizations experiment with skill-based pay,. research sites will be in greater abundance to facilitate investigation.

As discussed previously, organizations will face the specific demand of developing standards and methods of measuring skill for compensation purposes. Firms currently possess standards of job and performance measurement accepted by the workforce and research continues. Considerable research is being conducted on the measurement of the worth of the job to the organization; much of it in the comparable worth context (Doverspike, Racicot, and Albertsson, 1988; Schwab, 1985). Similarly, considerable research has been conducted on performance appraisal. As with job evaluation, however, the recent focus has been on the process of performance appraisal, not the basic standards of appraisal. In fact, much of the research on dimensions of the job in the context of worth was conducted over 40 years ago (Lawshe, Jr., 1945), with little investigation since. While there have been many studies over the years investigating the dimensionality of aptitudes for purposes of selection testing (Ghiselli, 1966), there is a current need to investigate potential skill dimensions for purposes of compensation. Once this is accomplished, research can proceed on process issues related to the measurement of skills.

The increasing reliance on work teams also presents research challenges. While there has been considerable investigation of the effects of individual incentives, there have been far fewer well-done studies of group incentive plans (Milkovich and Newman, 1987). Though the studies that have been conducted generally indicated positive results of group incentives, the generalizability to team oriented production and team incentives is low.

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Workforce 2000: Assumptions, Trends and Staffing Implications

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The U.S. economy is shifting from manufacturing to services, U.S. industries are becoming increasingly global, and advanced computer and information technologies are blossoming. Trends like these have compelled some distressing predictions for the productivity of U.S. labor, and thus for the productivity of U.S. firms and industries. These predictions generally presume that the U.S. labor pool will not be large enough, will not be technically sophisticated enough, and will not even have the reading and math skills necessary to become technically sophisticated for performing newly emerging jobs.

Two important assumptions underlie these pessimistic predictions. First, that a large portion of the labor force is, and will continue to be, handicapped by functional illiteracy and, second, that firm and industry productivity depends in part, on large, full-time and stable workforces. This paper challenges both assumptions and develops a more optimistic view.

Assumptions About Worker Illiteracy

There is little evidence to support the view that functional illiteracy prevents current workers from securing newly emerging jobs. First, all estimates and projections of functional illiteracy are based entirely on data obtained in one 1973 and 1974 survey, the Adult Performance Level Survey (APL), which was published by the University of Texas, Division of Extension in 1975 (Northcutt, 1975). This survey has several glaring weaknesses (Office of Technology Assessment, 1986). It did not actually measure adult literacy, it did not distinguish those who need only brush-up courses from those who need basic education, and it has been roundly criticized by educational researchers on virtually all aspects of research design (Haney and Lloyd, 1980). Second, the median years of education possessed by current job

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holders is 12.8 years (Johnson and Packer, 1987). This educational level is inconsistent with estimates of adult functional illiteracy. Third, half of all new jobs that are being created require medium- to low-skills. They include service occupations, administrative support, and marketing and sales. In services, the largest job growth is for cooks, nursing aides, waiters, and janitors. In administrative support, job growth is predominately for secretaries, clerks, and computer operators. In marketing and sales, most new jobs will be for cashiers. Today, these medium-to-low-skill jobs are in the middle of the skill distribution of all jobs. In the future, these jobs will comprise the lowest skill category among all jobs (Johnson and Packer, 1987). In the future, adults whose literacy levels are below those required for the above medium-to-low-skill jobs will not be able to obtain jobs, simply because the jobs for which they may qualify will no longer exist.

Elimination of the lowest level jobs in the economy, however, is not relevant for today's largely prime-age male workers. These workers are not illiterate, but those employed in the manufacturing sector do face increasing structural unemployment (Office of Technology Assessment, 1986). Their unemployment is related to reservation wages that are inconsistent with their wage alternatives.

Wages paid for professional and managerial jobs and for skilled and semiskilled manufacturing jobs place these jobs in the upper quartile of the wage distribution. The shrinking of the manufacturing sector has produced difficulties for displaced prime-age workers in finding comparable paying jobs in the service sector. Post 1979, employers also upgraded their educational and training requirements for staffing professional and managerial jobs. By 1985, over 40 percent of high-wage jobs were held by college educated workers (Seitchik and Zornitsky, 1989). This makes it difficult for the less educated, prime-age workers to meet the higher selection criteria for professional and managerial jobs. The fact that firms have raised educational and occupational selection criteria is inconsistent with the view of skill inadequacy but is consistent with total growth in the nation's human capital stock, and in particular, the growth of the college graduate population, which doubled between 1970 and 1985 (Seitchik and Zornitsky, 1989).

Assumptions About Productivity and Its Dependence on Stable and Full-Time Workforces

The slowing rate of labor force growth has also led to concerns for organizational staffing. This concern is based on the assumption that productivity of U.S. industry depends, in large part, on the presence of stable and full-time workforces. Two developments invalidate this assumption. One is the globalization of U.S. industry, and the other is the dissemination of computer and information technologies.

Until the mid-1960s, the U.S. economy was grounded in manufacturing technology. U.S. trade was also primarily conducted with Western European countries, which were relatively similar in their evolution of manufacturing technologies and employment patterns. In this context, an American firm's productivity and profits depended, in large part, on a large, reliable, and full-time workforce (Christopherson, 1987). Moreover, labor productivity could be increased through job fractionation and job specialization. The staffing problem, therefore, was to match individuals to specific fractionated and specialized full-time, stable jobs. Successful staffing resulted in increased productivity of the firm and increased stability of its workforce.

During the last two decades, the U.S. economy shifted its base from manufacturing to services. The competitive environment also changed from a relatively closed economic system to an extremely open system. Global markets opened up and industrialization took hold in previously underdeveloped countries. With increased global competition, American firms began expanding trade and production in these countries. Concurrently the advent, and worldwide dissemination, of computer and information technologies significantly altered U.S. trade relations and increased expansion of competition for U.S. firms. As firms experienced increasingly uncertain demand for their products and services and fluctuating input costs, incentives to increase productivity through efficient use of both technology (i.e., capital) and labor were created (Christopherson, 1987).

Although productivity is greatly dependent on efficient use of capital and labor, mechanization of manufacturing processes in the mid-1920s did not increase productivity of capital (Office of Technology Assessment, 1986). Instead, it allowed efficient division of labor through job fractionation and job specialization and also allowed for efficient coordination of work through centralization. In effect, mechanization technology served to limit labor expenditures by increasing labor productivity more than twofold from 1948 to 1984 (Office of Technology Assessment, 1986).

In contrast to productivity gains through mechanization technology, productivity gains of new computer and information technologies do not depend on availability of large, reliable, and full-time workforces. Rather, productivity gains from efficient implementation of new technologies are increasingly dependent on the firm's ability to distribute work in flexible ways, thereby controlling fixed costs (Christopherson, 1988).

Evolving Staffing Practices

As U.S. firms cope with an ever more competitive global economy and rapid technological changes, their staffing strategies are increasingly departing from the traditional concern with obtaining large, reliable, and full-time workforces. The staffing trend seems to be dominated by two interrelated strategies: (a) limiting permanent full-time employment to a core group of employees whose skills are critically needed to meet customer demand and are not readily available in the external labor market, and (b) using contingent workers on an "as needed" basis (Mayall and Nelson, 1982).

Implementation of these staffing strategies depends in part on competition for the available labor supply. The trend to limiting permanent full-time employment to critical skill requirements presumes tight labor markets for these skills. Tight labor markets appear to be a result of two interrelated developments: (a) expansion of traditional markets for experienced professional and managerial personnel, and (b) shortage of new labor force entrants with the requisite educational backgrounds and personal characteristics to work with new technologies and new work design and distribution processes.

In the relatively closed economic system of the past, employers tended to use industry-nonspecific markets for the cheaper, entry-level labor and industry-specific markets for experienced professionals and managers. The shortage of labor force entrants with education backgrounds and personal characteristics to work with new technologies and new work design and distribution processes is expected to prevail through 1995 (Johnson and Packer, 1987). In turn, competition for experienced professionals and managers who possess the characteristics unavailable from new labor force entrants can be expected to cross traditional industry boundaries.

Highly skilled professionals in computer and information technologies, for example, are demanded across industries. Firms that operate in consumer product markets also require that these professionals possess firm- and industry-specific knowledge (Christopherson, 1988). Thus, for these labor-intensive firms, competition for computer and information professionals is expected to be fierce. Recruiting highly skilled personnel with industry-specific knowledge is already increasing in sophistication as firms implement advertising campaigns to attract them from other firms (Hodges, 1982; Hutton, 1987; Martin, 1987; Palkowitz, 1987).

As competition spreads across industries, compensation and retention issues will increasingly need to be integrated with staffing concerns. In the relatively closed economic system of the past, firms tended to use prices paid in their product or service markets to price their professional and managerial jobs. As they implement new technologies and new work design and distribution processes, which also cross industry lines, successful recruiting strategies may increasingly depend on compensation offerings that are competitive across industries. A wide array of retention strategies may also have to be integrated into the staffing strategy.

Incorporating compensation and retention strategies into staffing strategies may be particularly important for labor intensive firms that operate in highly uncertain and competitive markets and experience variable but highly predictable demand for goods and services and also require firm-specific knowledge and skill maintenance over time. Consumer product industries have these characteristics and are already accommodating family or personal situations through job design arrangements, including telecommuter programs, or homework (Chin, 1984; Appelbaum, 1985; Christopherson, 1988).

Increasingly, firms across industries are seeking managers with personal characteristics and abilities to manage both technical problems and work groups. These characteristics depart significantly from those of traditional managers. Although presently the necessary managerial knowledges, skills, and abilities (KSAs) are ill defined, the available descriptors indicate managerial labor shortages and also suggest future improvements in currently used managerial selection tools.

Descriptors of emerging managers within the manufacturing sector, for example, indicate that newly valued managers are professionals who possess conceptual, flexible, and intuitive cognitive styles and abilities necessary to form and lead effective teams for problem solving, system design, and experimental production process design and implementation. Additional KSAs include ability to thrive on change, uncertainty, and ambiguity and to delegate easily and act in ways to win acceptance from a broad range of business contacts including suppliers, customers, and unions (Skinner, 1983). Many of the above KSA requirements are likely to apply across industries.

Besides competition for professional and managerial employees, firms that require lower-level employees to possess up-to-date firm-specific knowledge and maintenance of skills over time may need to develop more sophisticated attraction, selection, and retention strategies than used in the past. The sophistication of the staffing strategy, however, may depend on labor supply. For example, the advent of office automation is changing the nature of work flow and control requirements and thus, the nature of jobs. In telecommunications and insurance industries, for instance, routine professional/ administrative jobs and engineering jobs are being eliminated and in their place new hybrid administrative/clerical (adcler) and technical/ clerical (techcler) jobs are being created. These hybrid jobs require more technical and administrative sophistication than traditional clerical jobs, but less than the jobs they replace. The new jobs consist of multiple activities requiring discretionary performance and thus, conceptual skills. Workers have to have high general literacy skills, mathematical aptitude, and verbal communication and problem-solving skills (Appelbaum, 1985). Although the staffing of adcler and techcler jobs may be considered a part of the critical skills relevant to staffing permanent, full-time jobs, the abundance of these skills in the labor market reduces incentive to invest in these workers. Increasingly, firms are using the adcler and techcler workers as subcontractors who work at home (Appelbaum, 1985).

The trend in staffing lower-skilled jobs and professional jobs that don't require industry-specific knowledges is to use contingent workers on an "as needed" basis. Abundance of labor supply in combination with uncertain product and service demand and fluctuating input costs have increased incentives to purchase labor on an "as needed" basis. Projections are that contingent workers will make up the largest share of a firm's work force in the future (Mayall and Nelson, 1982). Two categories of contingent workers are increasingly available for employment: (a) independent contractors, and (b) temporary part- and full-time workers.

Independent contractors are normally thought of as being owners of small businesses. The majority of small business owners, however, do not fit the conventional view of a small business. Approximately 70 percent of these businesses have no paid employees. Of these, 89 percent are owned by women who provide business services on a contract basis (Christopherson, 1987). Accordingly, government statistics on the growth of small businesses are misleading. As these statistics are based solely on the movement of employment from large to small firms, they fail to show that this movement may have been motivated by decreasing job opportunities. In the case of women, it may also be motivated by desires to remain at home (Johnson and Packer, 1987).

Independent contractors are important sources of labor supply for firms and industries demanding short-term, specialized professional services or specialized routine business services, usually without the related demand for firm or industry-specific knowledge. When the latter demand is present, the workers are considered home workers but are treated as subcontractors (Appelbaum, 1985). Subcontractors of routine business services are used by large and small firms that have ongoing transactions with individuals or other firms and also have unpredictable patterns of service demand (Christopherson, 1988). Most business services providers are women who have expanded the pool of available part-time, flexible clerical workers and low-level administrators. Many of these workers forfeit their independent status to sign contracts that restrict them from serving more than one client (Christopherson, 1987).

Professionals who work as independent contractors are prevalent in electronics, chemicals, and specialized business services. Among the professions represented in this category are graphic design, engineering, technical writing, systems analysis, computer programmers, accountants, and lawyers (Christopherson, 1988). This group of contingent workers is an attractive source of labor supply for firms that are highly flexible and do not require firm- or industry-specific knowledges but require teams of specialists to work only for the duration of a particular project. Firms that use professional subcontractors are willing to pay premium rates to maintain flexible workforces (Christopherson, 1988).

Besides the use of independent contractors, firms are increasingly using temporary part- and full-time workers. Again, they are able to do so because of abundant labor supply. Employment data show that part-time job growth is faster than full-time job growth. For example, during the first six months of 1987, part-time job growth was 3.0 percent compared to full-time job growth of 0.4 percent (Christopherson, 1987). About one-third of the labor force (25 million) work as temporary workers. Most of the part-timers are women, blacks, and minorities. Moreover, about four-fifths of them are voluntary part-timers (Williams, 1988).

The largest portion of part-time workers are hired directly by the firm (Christopherson, 1987). Increasingly, however, temporary workers are being supplied by temporary help services (THSs). These independent businesses provide specialized labor pools for assignments of varying duration. The THSs act as labor market intermediaries between the employer's labor demand and available labor supply (Mayall and Nelson, 1982).

The use of THSs is likely to increase. They provide employers with quick access to labor, eliminate all employment-related responsibilities and obligations, and increase flexibility in compensation costs. On the downside, THSs entail payment of premium rates for workers. THSs also introduce disincentives to hire temporary workers full-time, because to do so may entail compensating the THS for "liquidated" damages.

Conclusions

Overall, the pessimistic estimates for the educational quality of the labor force are not supported. The dire predictions of unemployment for less-educated workers are probably also inaccurate. The shrinking labor force, however, is likely to increase employer labor market competition as well as compensation costs for worker categories whose KSAs are demanded across industries. To minimize fixed labor costs, firms are beginning to (a) limit permanent employment to critical skill requirements, and (b) use contingent workers on an as-needed basis for noncritical skill requirements and when work flow distribution, control, and labor availability permit. In the short run, these strategies increase costs for certain classes of contingent workers, but they also allow for maintaining workforce and labor cost flexibility. Competition across industry boundaries for full-time workers with critical KSAs is likely to increase staffing costs as more broadly scoped and integrated staffing strategies may need to be developed. The above staffing trends may enhance ability to compete in the world's markets but appear not to be consonant with national interests, as they prevent many workers from securing full-time jobs. They may also hinder the less productive firms and industries from successfully competing for the most desirable employees. The latter outcomes may have dire consequences for U.S. society and the welfare of large segments of its citizenry.

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XXII. TRADE POLICY AND THE LABOR MARKET

Does it Matter What We Trade? Trade and Industrial Policies when Labor Markets Don't Clear

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The last decade has seen considerable interest in models of labor markets that don't clear including efficiency wage, rent-sharing or rent-extraction models. In efficiency wage models, firms set employment so that the marginal revenue product of labor (MRPL) equals the wage. If the payment of efficiency wages results in interindustry wage differences for comparable workers, there exist welfare-enhancing industrial and trade policies which shift employment from low- to high-wage industries.

Two papers have attempted empirical assessments of the importance of such considerations: Dickens and Lang (1988) and Katz and Summers (1989). In both papers the authors assume that firms set employment so that the MRPL equals the wage. However, not all explanations for interindustry wage differences have that property.

This paper begins by reviewing the evidence on interindustry wage differences and argues that we should prefer rent-sharing/extraction models over other explanations. Second, it is argued that in most attractive rent-sharing/extraction models the wage does not equal the MRPL. In the model presented, MRPL is set equal to the opportunity cost of labor so policies to shift employment to high-wage industries would be of no value. Further, the empirical work that has been done

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to assess the importance of labor market distortions for trade and industrial policy is inapplicable if such models are the correct explanation for interindustry wage differences.

Finally, a rent-extraction model that takes into account workers' limited information about the profitability of the company they work for is developed. In that model, high-wage industries have high MRPL so policies to shift employment to high-wage industries are appropriate. Previous empirical studies can be interpreted as yielding close approximations to the effects of trade and industrial policies.

Inter-Industry Wage Differences and Models of Wage Determination

Five papers review the evidence on interindustry wage differences (Dickens and Katz, 1987a, 1987b; Krueger and Summers, 1987, 1988; and Katz and Summers, 1989). All conclude that models in which the labor market does not clear allow a better explanation of the facts than any model in which the labor market clears. Most of these papers also conclude that rent-sharing/extraction models should be preferred among the class of models where labor markets do not clear. Lindbeck and Snower (1988b) also make this argument. The two most important facts in this regard are the correlation of wages with industry profitability and the high correlation of wages across occupations within industries—industries which pay their production workers more than other industries pay all occupations more.

Both observations are difficult to reconcile with standard theories of efficiency wages which explain differences in workers' wages as due to differences in the costs of monitoring or replacing workers or due to the extent of unobservable differences in productivity.

It is possible to explain the correlation with profitability in a shirking efficiency wage model with heterogeneous workers. In such a model, the efficiency wage depends not only on the monitoring technology but also on the cost to the firm of shirking. If shirking is more costly if each worker is working with more capital, then profits per worker or profits as a percentage of sales may be correlated with wages since both those measures of profits would be correlated with capital intensity. The wages of production workers could be determined in this manner, and the correlation of wages across occupations could result from norms of fairness.

This argument is unconvincing for two reasons. First, Dickens and Katz (1987a) find that capital-per-worker has a more tenuous relation to wages than profitability, and that the correlation between profits and wages persists when controlling for the capital/labor ratio. Second, it is difficult to reconcile efficiency wages with the size of interindustry wage differences. The premium necessary to deter shirking is amortized over a worker's entire career. In high-wage industries, job durations are long so that even if the probability of apprehension is low and the utility value of shirking high, increases in wages would be small. Finally, norms of fairness are a poor explanation for long-run phenomena. Although difficult to manipulate in the short run, norms of fairness are subject to change over time. By changing educational requirements, organizational structure, or even job titles the jobs that a worker compares his or her wage to can be changed.

Rent-sharing/extraction models provide an obvious explanation for the correlation between industry wage premiums and industry profitability. As long as all occupations in an industry are receiving some rent, the surplus of their wages above the market clearing wage will be proportional to profitability and therefore correlated with the wage of other occupations in the industry. Further, the bargained surplus should be proportional to the flow of surplus and can, therefore, be large.

Policy Implications of Rent-Sharing/Extraction Models

In standard efficiency wage models, the wage paid does not depend on the level of employment. Although it is not exogenously given to the firm, the wage is determined by parameters which are unaffected by any individual firm's hiring decisions. Thus, for the purposes of determining employment, the wage is exogenous and the firm hires workers up to the point where the MRPL is equal to the wage. This is not true of most rent-sharing/extraction models. Consider the simplest of them which is presented below. In this model, workers expect the firm to pay them at least their reservation wage. Since they contribute to the performance of the firm they also expect to receive a share of the profits from the firm.[1] As in other normative wage models, workers who do not receive the wage they expect will withhold labor. The firm can not profit by replacing such workers since new workers will behave the same way. Thus the firm pays the normative wage which is written:

$$w = r + s\,(R(L)/L - r), \tag{1}$$

where w is the wage, r the workers' reservation wage, s the share of profits workers expect to receive, and R(L)/L revenue net of nonlabor costs per worker. The term in parentheses is the profits per worker available after paying labor its opportunity cost. Substituting (1) into the firm's profit function rearranging terms and differentiating yields the first order conditions for a maximum with respect to L

$$\text{(2)} \qquad dpi/dL = (1 - s)\ (R'(L) - r) = 0$$

or

$$R'(L) = r.$$

Thus, while there may be unemployment in a world populated by such firms in the sense that there are workers who would like to work at the going wage who the firms won't employ, there is no potential gain to efficiency from increasing employment (as there is in the standard efficiency wage model). Further, as long as the reservation wage is equal across industries, the MRPL will be equal across industries and there will be no argument for policies favoring employment in one industry as opposed to another or for favoring high-wage industries in trade policy.[2] Finally, the empirical analysis of the effects of trade and industrial policy done in Dickens and Lang (1988) and Katz and Summers (1989) are inappropriate since they assume that firms are setting their MRPL equal to the wage.

This result is not unique to this model. Rather it is typical of this class of models. If rent-sharing results from collective bargaining, most models of union behavior suggest that the MRPL should be equal to, or less than, the reservation wage.[3] If rent is being extracted by workers by virtue of a threat of collective action as in Dickens (1986) or Lindbeck and Snower (1986, 1988b), then again the MRPL may not be set equal to the wage.[4]

Expense preference models are a class of rent-sharing models that may not be subject to this criticism. In these models, utility-maximizing managers choose between spending firm profits on extra salary and perks for themselves or on wages for workers to make the managers' lives easier and more enjoyable (this assumes that higher-paid workers are easier to manage and more pleasant to work with). Managers may dispose of firms' profits in this manner because they are subject only to a minimum dividend constraint or some other weak agency constraint. In such models, the wage will equal the MRPL as long as firm size or employment don't also enter the manager's utility function.

Such models are unattractive for several reasons. First, given the size of interindustry wage differences it is hard to believe that either stockholders or takeovers wouldn't enforce the discipline of the market place on such managers. It is easy to believe that managers could spend quite lavishly on themselves without sufficiently lowering the return on equity. However, paying wage bonuses of greater than 10 percent would cost an order of magnitude more than Persian rugs and helicopters for managers and would certainly invite takeovers, if not disciplinary action, by stockholders.

Finally, it is likely that firm size does enter into the calculation of managers' utility—expense preference was used to explain firms' interest in market share long before it was used to explain interindustry wage differences. In that case, the MRPL would be set below the wage and might be only tenuously related.

For these reasons, the most attractive rent-sharing/extraction models are the ones that have the property that wages are not a good indicator of the MRPL. This is itself an unattractive property. I have never heard a manager say, "In planning this layoff remember that the shadow price of labor is actually less than the wage because by hiring more workers we lower profits per worker and can get away with paying them less." If managers aren't explicitly thinking this way, it's hard to imagine how their behavior could lead to this result.

Even if they did think this way, it is hard to imagine that workers would let them get away with it. In the absence of a union, most workers probably know very little about the profitability of the firm. To get some idea of what their firm might be able to pay them, they look at what comparable firms are paying and adjust that by what they know about the unique circumstances of their firm (Ross, 1948; Dunlop, 1957). Thus, their wage expectations are unlikely to be affected much by the hiring decisions of their own firm.

Rent Sharing With Imperfect Information About Rents

Consider again the normative rent-sharing model introduced in the last section. Now however, let's examine what happens if workers have less than perfect information about net revenue per worker. In the absence of other information, we might expect them to substitute their best guess about net revenue per worker for the real thing. As long as their best guess is an unbiased estimator, this should not affect the expected value of the wage nor any of the outcomes. Workers might reasonably believe, however, that the wages paid by other, similar firms contain information about the state of the product market in which their firm participates, as well as the state of the general economy. Consequently, they may use them as additional signals of the profitability of their firm. To the extent that own wages are a function of the profitability of other firms, they are exogenous to the particular firm and will be treated accordingly in choosing the MRPL.

The model presented below has the property that workers optimally use the information available in the wages of other firms. This yields a very simple formula for the normal wage as a function of the reservation wage, net revenue per worker, and the average wage of comparable firms. As the number of comparable firms becomes large, the MRPL increases until it is equal to the wage.

Suppose that workers at Firm 1 expect to be paid according to (1) but do not know the true value of $R_1(L_1)/L_1$—only an unbiased estimate. They also know the value of wages paid by $N - 1$ other firms w_i for $i = 2$ to N. Assume also that they know that wages at those firms are set in the same manner as wages at their firm and that the workers at those firms have a signal on $R_i(L_i)/L_i$ which they use in determining their wage demand. It will be assumed that $R_i(L_i)/L_i$ is an independent signal of the value of $R_1(L_1)/L_1$ and that the ratio of the variance of the estimate of $R_1(L_1)/L_1$ based on information from Firm i to the one based on the signal from Firm 1 is a. Then they will want to form their wage demand as in (1) substituting

$$(3) \qquad (a\ ER_1 + \sum_{i=2}^{N} ER_i) \ / \ (a + N - 1)$$

for $R_1(L_1)/L_1$ where ER_i is the best estimate of $R_i(L_i)/L_i$ given the information available to the workers in Firm i. The information on ER_i is available in w_i, but extracting it poses something of a problem.

If workers in Firm 1 use the information in the wages of workers at other firms in forming their wage demands then certainly the workers at the other firms are looking at the wages in Firm 1. Workers in Firm 1 must take this into account. However, if they do that then other workers must behave in a similar fashion, and we find ourselves in an infinite regress.

Luckily, the solution to the infinite regress is simple. Sufficiently simple that it seems reasonable to believe that workers' intuitive solutions to this problem might well provide a close approximation to the optimal solution and thus allow the "evolutionary" survival of such behavior.[5]

To begin with suppose the solution takes the form

$$(4) \qquad w_i = c_1 r + c_2 w_{-i} + c_3 ER_i$$

where w_{-i} is the average wage paid by firms other than i and c_1, c_2 and c_3 are constants to be determined below. Then ER_i is easily determined as $(w_i - c_1 r - c_2 w_{-i})/c_3$. Substituting this into (3), (3) into (1) and rearranging terms yields

$$(5) \qquad w_i = \{[(1-s)(a+N-1) - (sc_1(n-1))/c_3] r + sa\, ER_i +$$
$$[s(N-1) w_{-i} - sc_2 (w_i + \sum_{\substack{j=1 \\ j \neq i}}^{N} [w_{-j} - w_i/(N-1)])]/c_3\}/(a+N-1).$$

Note that $\sum_{\substack{j=1 \\ j \neq i}}^{N} [w_{-j} - w_i/(N-1)] = (N-2) w_{-i}$ rearranging terms and solving for w_i yields a solution of the same form as equation (5). Setting the coefficients of r, w_{-i} and ER equal to c_1, c_2 and c_3 respectively and solving yields

$$c_1 = (1-s)([a+N-2]a-[N-1])/d,$$

$$c_2 = (N-1)(a+N-1)/d,$$

and

$$c_3 = s([a+N-2]a-[N-1])/d$$

where

$$d = (a+N-1)(a+N-2).$$

Note that the numerators of c_1 and c_3 are of order N while the numerator of c_2 and the denominator d are of order N^2. Thus, for large N, c_1 and c_3 are essentially zero and c_2 is equal to 1 and each firm's wage is approximately exogenously given as the average of the wage of other similar firms.

What will that wage be? Substituting (4) into the definition of w_{-i}, and then rearranging terms yields

$$(6) \quad w_{-i} = \{c_1(N-1+c_2)r + c_2(w_i + (N-2)w_{-i}) + c_3 ER_{-i}\}/(N-1)$$

where ER_{-i} is the average value of ER_j for j not equal to i. Substituting (4) in for w_i, solving for w_{-i} and taking the limit as N goes to infinity yields

$$(7) \qquad w_i = w_{-i} = (1-s)\, r + s\, ER_{-i}.$$

What is a large N? That depends on the size of a. If information on one's own firm is three times as informative about profitability as information on the average comparable firm, then with 9 comparison firms c_2, the weight on w_{-i}, will equal 5/6. These are believable numbers and 5/6 is sufficiently close to one that the analysis in Dickens and Lang (1988) and Katz and Summers (1989) show are reasonable approximations. Such numbers would also account for the lack of attention by managers to the potential for lowering wages by expanding employment.

Acknowledgments

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Endnotes

[1] See Kahneman, Knetsch and Thaler (1986) for evidence that workers behave this way.

[2] If R is not net of capital costs and s differs between industries, then there are welfare improving differential subsidies to capital. Targeted trade or employment policies may be second best alternatives. However, industry wage differences will only be a guide to which industries to target, to the extent that they reflect differences in s as opposed to differences in R(L).

[3] This is the efficient contracts literature. See Ashenfelter and Brown (1986) for a discussion and some empirical evidence. See Oswald (1985) or Johnson (1986) for examples of models where the VMPL is equal to the wage or an increasing function of both the wage and the reservation wage.

[4] This is true of all specifications of the union-threat model that Dickens (1986) considers except for one and then only in one regime. It is also true of the more attractive of the models considered by Lindbeck and Snower (1988b). Those that don't have this property also fail to yield a correlation between profits and wages.

[5] The static nature of this model makes it seem less realistic than it may actually be. The equilibrium is the same as what would be arrived at if wages react through a series of sequential or simultaneous adjustments to new information.

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Trade Policy, Employment and the Costs and Benefits of Protection[1]

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The policy debate between advocates of free trade versus those of managed trade has often focused on the employment effects of trade policy restrictions. Opponents of trade restrictions have frequently calculated the "cost per job saved" of trade restrictions. Proponents of these restrictions have often responded with studies showing that a much larger number of jobs are at stake, and thus that the cost per job saved is much lower. However, recent research has shown that protection can yield benefits that are diffused throughout the economy. Thus, this debate should utilize broader measures of costs and benefits which go beyond estimates of the employment effects and consumer costs of trade protection.

Recent theoretical and empirical research have shown that in a world of imperfectly competitive product markets, protection can yield several different types of benefits, not all of which accrue directly to the protected industry and its employees. For example, trade protection may have substantially increased the rate of technological innovation in production technology in the US textile industry and may result in long-run price reductions for consumers. This paper develops a conceptual framework for measuring the benefits of innovations which are induced by trade protection and develops some illustrative estimates of the effects such innovations can have on the overall costs of protection in this sector.

Trade Policies for Imperfectly Competitive Product Markets

An increasing share of US and world trade takes place between firms in the same industry, and even within the same multinational company (Richardson, 1989, p. 1). Traditional theories of comparative advantage cannot adequately explain the location of production with intraindustry trade. Recent developments in trade theory suggest that

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"[t]he pattern of intraindustry trade is itself unpredictable . . . This indeterminacy . . . should be interpreted to mean that history and accident determine the details of the trade pattern." (Krugman and Obstfeld, 1988, p. 139). However, it is known that market imperfections, especially the existence of scale economies, learning curves, and patterns of technological innovation with substantial spill-over benefits outside the firm play important roles in explaining trade patterns in such industries. National macroeconomic policies in areas such as research and development, infrastructure improvement, and human capital formation can be important determinants of the location of these sectors, as can trade and industrial policies.

The new theories of trade in imperfectly competitive industries have shown that it is possible for trade protection to increase national welfare (Kuttner, 1989). This can occur when trade policies induce innovations and learning-curve gains which increase productivity levels in an industry. It is also possible for trade policies to capture rents in industries where scale economies are important. Dickens and Lang (1988) and Katz and Summers (1989) have further shown that trade protection can improve national welfare if there are substantial differences in the productivity of import and export industries. Finally, there are often adjustment costs for workers and communities that result from trade-related displacements and which should also be included in analyses of the costs and benefits of protection, although they rarely are. The existence of these types of market imperfections provides an intellectual foundation for recent proposals for systems to manage international trade.

The question of whether an economy gains or loses from protection in an imperfectly competitive industry depends critically on the particular structure of that industry (Richardson, 1989, p. 1), and has generated some acrimonious debate. The US textile industry has been the focus of one of these debates (Cline, 1987, and Kuttner, 1989). The next section reviews one recent study of the textile and apparel industries by William Cline (1987) and augments the results of his study with estimates of the benefits of induced innovations.

The Welfare Effects of Trade Protection with Induced Innovations

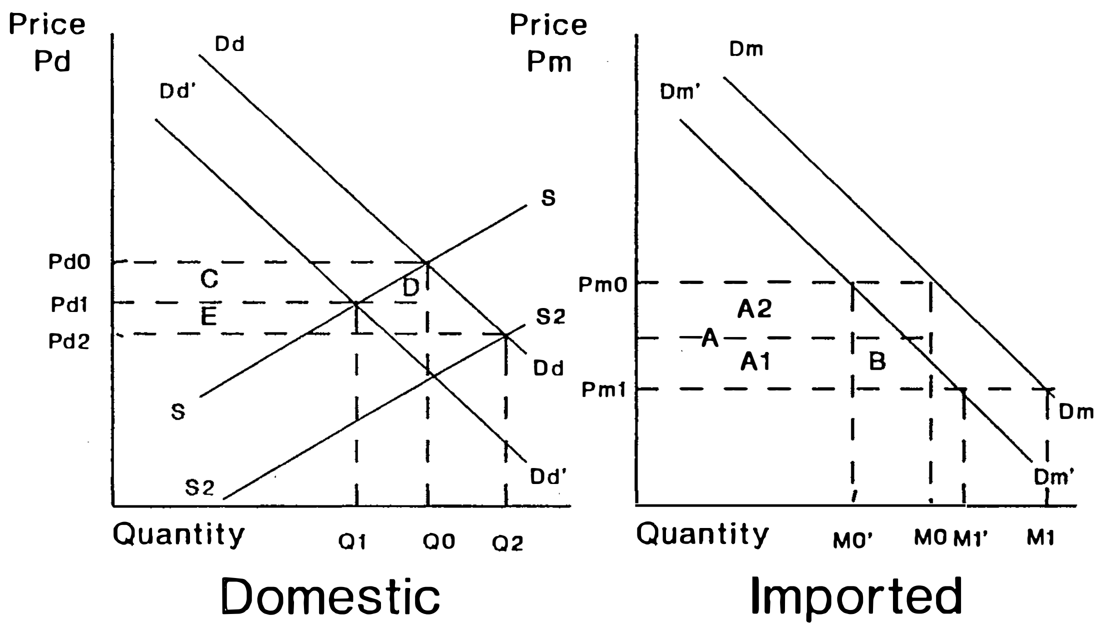
The effects of eliminating trade protection on national welfare can be separated into four standard components: consumer gains, transfers from producers to consumers, efficiency gains from resource reallocation, and government tariff revenue losses.[2] This paper suggests that protection can also have a supply-side effect. In theory, protection can increase national welfare if it leads to an increase in research and development (R&D) by firms in the protected industry which generates spillover benefits for other firms. Markets fail to adequately reward firms for research when there are such positive externalities, and protection can increase national welfare by stimulating such R&D. The innovation response is assumed to increase productivity and hence result in an outward shift in the domestic supply curve, generating social benefits from the induced R&D. This section reviews each of the components of welfare analysis in Cline's study and then develops a framework for estimating the supply-side benefits of protection.

Consumer Gains[3]

Cline's approach assumes that imports and exports are imperfect substitutes. His model is illustrated in Figure 1. This model assumes that imports are restricted with both tariffs and quotas. The effective rate of protection provided by both (T) is estimated by Cline. The domestic price of imports (P_{m0}) is equal to the world price (P_{m1}) + T. The model assumes that when all import protection is eliminated, import prices fall from P_{m0} to P_{m1}. As a result of the fall in the price of (substitute) imported goods, domestic demand falls from D_d to D_d'. Assuming that the domestic supply curve is upward sloping, then domestic prices fall from P_{d0} to P_{d1}, and domestic production falls from Q_0 to Q_1. A secondary shift in import demand from D_m to D_m' then results from the drop in domestic product prices. Import consumption then rises from M_0 to M_1' (however welfare estimates use the new, import-demand curve, with imports rising from M_0' to M_1').

Consumer gains are composed of two components. First, the change in consumer surplus in the import market, which results from the fact that consumers are able to buy more imports, at a lower price. This change is, in turn, made up of two parts: area A (import market), which is the change in import price (T) times the output level under protection (the sum of areas A_1 and A_2 in Figure 1); and area B, which is the consumer surplus associated with increased import sales (one-half times the change in import price times the change in import quantity). Thus, consumer gains on the import side equal the sum of areas A and B. The final element of consumer gain is the change in consumer surplus realized in the domestic market, which results from the decline in domestic product prices. This gain is equal to the area C (domestic market), which is the change in domestic price times the new quantity demanded.

FIGURE 1
Supply and Demand for Domestic and Imported Goods



Source: Adapted from Cline (1987, p. 302).

Thus the change in consumer welfare (W_c) is:

(1) $$W_c = A + B + C.$$

This consumer welfare estimate is the basis for Cline's widely discussed estimates of the cost per job saved in these industries. However, in order to calculate the new effects of protection on national welfare it is also necessary to include the effects of protection on transfers from consumers to producers, efficiency gains from resource reallocation, and government tariff revenue loss. In sum, these later effects reduce the welfare costs of trade protection. Thus Cline's cost per job saved estimates are higher than the national costs of protection (per job), a subtle difference which tends to be overlooked in the trade policy debates.

Other Components

The gain in consumer surplus in the domestic market which results from the fall of domestic prices (area C, above) is a transfer from domestic producer surplus and has no net effect on national welfare. Hence area C must be netted out of the latter.

Under protection it is assumed that some resources are being inefficiently used by domestic producers to supply goods beyond the free-trade level of output. Area D is this deadweight loss on the domestic supply side resulting from protection (one-half times the change in domestic prices times the change in domestic output).

If protection is eliminated the government will experience a decline in tariff revenue. The government's direct revenue losses would be the actual tariff times the f.o.b. import price times the import quantity (from the new import demand curve). This is equal to area A_1 in Figure 1. It is assumed that the rents associated with the quotas (area A_2) are transfers to foreign producers. Since these rents would vanish if protection were eliminated, Cline's analysis assumes that their elimination contributes to national welfare.

An alternative point of view on quota rents is that they are costs to the nation which result from our policy choice to protect this sector through quotas, rather than tariffs. Thus the quota rents can be considered a cost of achieving other national policy goals. Estimates of national welfare effects which exclude these rents may provide a better estimate of the costs of protection.

Cline calculates the net welfare gain (W) to the economy as consumer gains minus the transfer from domestic producer surplus, plus the deadweight loss on domestic production, less the government's tariff revenue losses:

(2) $W = [A + B + C] - C + D - A_I = A + B + D - A_I.$

An alternative estimate of the net welfare gain (W′) assumes that *all* the consumer surplus gains in the import market represent losses of *potential* government tariff revenue. In this case the 'revenue compensated' welfare effects of the tariff are limited to the traditional deadweight losses associated with protection:

(3) $W' = B + D.$

Induced Innovations

Protection affords a domestic industry an opportunity to adjust to changes in its international competitive environment. "Revitalization through technological change has brought rapid growth in labor productivity in the textile sector. Open-end spinning, shuttleless looms, increased fiber polymer extrusion rates, wider looms, and robotics for in-plant transit are examples of technical change in textiles (Cline, 1987, p. 5)." Trade protection may have played a role in inducing innovation in the textile industry in the past. Labor productivity growth averaged 4.88 percent per year in textiles over the 1961-1972 period and 3.71 percent over the 1973-1985 period.[4] These figures exceeded the average rates of productivity growth in all of manufacturing by 1.37 and 0.81 percentage points, respectively, over these same periods. The real price of textiles (relative to the consumer price index) fell by 45.6 percent between 1960 and 1980. As a consequence the US, which had been a net importer of textiles since 1960 (the year before the first apparel restraints were enacted), became a net exporter of these products in 1979 and 1980. However, because of currency appreciation, in the early 1980s the US again became a net importer of textiles. Productivity growth rates in apparel have been much lower than in textiles, and it is assumed here that protection did not result in any increase in the rate of innovation in this sector.

If protection has induced significant technological innovation in the textile industry, then the domestic supply curve in Figure 1 is not stationary. Thus, it is necessary to consider dynamic adjustments in domestic supply behavior in order to estimate the costs and benefits of protection in this sector. If we assume that productivity growth will continue at levels that prevailed in the past, then the supply curve in this market will continue to shift out in the future. In order to assess the benefits of induced productivity growth it is necessary to consider the position of the domestic supply curve, at some point in the future, with protection.

Figure 1 shows a domestic supply curve that has shifted out to a point where the equilibrium price with the tariff falls below the unprotected price (P_{d1}). The domestic supply curve would shift out from S_0 to S_2 gradually, over time, as a result of innovations induced by trade protection. As a result the domestic price eventually falls to P_{d2}. If productivity "benefits" (productivity growth in excess of the national average rate, or some other estimate of productivity growth in the absence of protection) continue to accrue in this industry then at some point in time the domestic supply curve will reach a position such as that suggested in Figure 1. This crude measure of the extent of induced innovations can be challenged because it lacks a theoretical or (international) comparative foundation. It is adopted here only to illustrate the potential magnitude of the benefits of induced innovations and their effects on estimates of the cost of protection. Estimates of the time required to reach S_2 and of the effects of induced innovation on welfare are developed in the next section.

One new element must be added to the calculus of welfare analysis in order to analyze the effects of trade protection in the model illustrated in Figure 1. If the price paid by consumers of the domestic product falls below P_{d1} then there are direct benefits to consumers which are a result of the induced productivity improvements in the industry. These benefits are equal to the gain in consumer surplus on the Q_1 units which would have been consumed in the absence of trade protection. The new element of consumer surplus in the domestic market is area E, which is output level Q_1 times the difference between P_{d2} and P_{d1}.

As the domestic price falls, the consumer welfare loss from protection (area C) is gradually eliminated. The consumer welfare benefit (area E) must also be subtracted from the measures of consumer and national welfare costs of protection (W and W′). The existence of a benefit to domestic consumers from induced innovation creates the potential for welfare improving trade policies (which would have *negative* welfare costs).

Costs and Benefits of Protection

The model used to estimate the supply side effects of the induced innovations is based on Cline's (1987) model and estimated supply and demand parameters. It is assumed that the supply curve shifts outward at the rate of induced productivity growth. This assumption says that firms are willing to increase the amount supplied by the rate of induced productivity growth, without changing prices. If demand is stable, this assumption will lead to a reduction in prices, which is consistent with the historical pattern of declining real textile prices. This assumption does not imply that *all* the benefits of innovation result in lower prices, but only that proportion of productivity growth which is in excess of national manufacturing averages.

Productivity growth in the textile sector exceeded the manufacturing average by 1.37 percentage points in the 1961-1972 period and by 0.81 percentage points in the 1973-1985 period. These figures provide baseline estimates of future induced-productivity growth. Supply-curve shifts of this magnitude will yield domestic price reductions of 0.85 percent and 0.5 percent per year, respectively, given the supply and demand elasticities used in the model.[5] Cline estimates that protection increased domestic textile prices by 3.1 percent in 1986. With these rates of price change the protected domestic price would fall below the unprotected 1986 price in 4 and 7 years, respectively.

Table 1 summarizes Cline's estimates of the welfare costs of protection in textiles and apparel in 1986. Table 2 presents revised estimates for the costs of protection in 1993 in the textile industry, assuming only the supply side effects described here and no other changes in underlying microeconomic or macroeconomic conditions.

It is interesting to note the difference between the consumer cost of protection (W_c), net welfare cost (W), and revenue compensated welfare cost (W′) in Table 1. The consumer cost is over two times as large as the welfare loss in apparel and over three times as large in textiles. Revenue compensated costs are even smaller than the net welfare costs of protection, with the difference between these two

TABLE 1
Costs of Protection: 1986[a]
(Millions of Dollars)

		Textiles	Apparel
W_c	Consumer cost of protection, from:	2,778	17,556
	A Change in import price	1,072	6,421
	B Consumer surplus on change in imports	203	3,130
	C Change in price on domestic good	1,513	8,005
D	Cost from resource misallocation	24	933
A_1	Transfers to tariff revenue	488	3,167
W	Net welfare cost of protection	811	7,317
W′	Revenue compensated welfare cost	227	4,063

[a] *Sources:* Cline, 1987 p. 191. and author's calculations.

TABLE 2

Costs of Protection in the Textile Industry with Induced Innovation Effects: 1993[a]

(Millions of Dollars)

	Induced Innovation Effect:	low (0.81%)	high (1.37%)
W_c	Consumer cost of protection, from:	1,096	−27
A	Change in import price	1,072	1,072
B	Consumer surplus on change in imports	203	203
C	Change in price on domestic good	0	0
E	Benefits of induced price change	179	1,302
D	Cost from resource misallocation	24	24
A_1	Transfers to tariff revenue	488	488
W	Net welfare cost of protection	632	−491
W′	Revenue compensated welfare cost	48	−1,075

[a] *Sources:* Cline, 1987 p. 191. and author's calculations.

reflecting the costs of the government's preference for (nonauctioned) quotas over alternatives which could increase US revenues.

Induced innovations have two significant effects (Table 2). First, the consumer cost of protection in the textile industry is reduced or eliminated, relative to the estimate in Table 1. This effect, which results from dynamic gains associated with steady technical progress, is ignored in the standard analysis of the effects of protection. Second, there is now a case where induced innovations have generated *positive net benefits* for the nation as a whole, if we assume that past rates of productivity growth will continue in the future as a result of trade protection for this sector. These results demonstrate the importance of considering both market imperfections and dynamic effects when evaluating sectoral trade policies.

Conclusions

This study has examined one particular form of market imperfection, the existence of positive externalities associated with increased R&D that results from protection of domestic producers. Other factors, such as learning curve effects and the costs of displacement, have not been considered here. Traditional models for evaluating the effects of protection must be modified to provide a framework for analyzing the effects of these sorts of factors. This study has suggested a new approach for quantitatively assessing these types of effects. The issue of whether or not protection has increased the rate of production innovations and productivity growth, and the measurement of such effects, is an important area for future research. This paper has shown, using illustrative estimates of the benefits of induced innovations, that these effects can significantly change the estimated costs and benefits of protection at the industry level.

Trade protection for imperfectly competitive industries can increase national welfare. It is unlikely that economists or planners in 1960 would have identified the US textile industry as one likely to experience high rates of productivity growth over the 1960s and 1970s. To the extent that productivity-enhancing innovations in this sector were induced by protection, this suggests that activist trade policies can be justified for some "distressed" industries on a temporary basis, to see if they can adjust successfully.

This study has also shown that trade policies should be evaluated on the basis of their effects on national welfare, especially where market imperfections may be present. Analyses of consumer costs and/or employment effects alone leave out important and potentially beneficial effects of protection. Whether trade protection will have positive or negative effects on net national welfare is an important theoretical and empirical issue for future industry-specific research.

Endnotes

[1] I would like to thank Donald Stockdale and Robert Windle (Univ. of Maryland) and the participants in my session at the IRRA meetings for helpful comments on an earlier draft of this article. All remaining errors are my own.

[2] Note that this analysis leaves out a fifth factor usually included in analyses of the effects of a tariff or quota: the effects of protection on import prices (the terms of trade effect).

[3] This section and the next paraphrase Cline (1987, pp. 301-313).

[4] The productivity, price and trade figures here are from Cline (1987, pp. 35, 40, 89).

[5] These calculations ignore the secondary effects of the domestic supply shift on the import market, and make no direct adjustments for the effects of technological change in the import sector. Calculations available upon request from the author.

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The Impact of Trade on Black Employment and Wages 1982-1985

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In 1981 U.S. exports of goods and services exceeded imports by $14 billion resulting in a current-account surplus for that year. That year also proved to be something of a watershed: In virtually every year from the end of World War II until 1981, the U.S. recorded a significant trade surplus. After 1981, however, the U.S. experienced one of the most abrupt reversals in trade position ever recorded. By 1985 the U.S. trade deficit in goods and services was averaging about $125 billion annually, with the deficit in goods alone reaching an annual rate of $160 billion, or more than four percent of U.S. gross national product (GNP). By 1985 the previous capital outflow reversed with a foreign capital inflow of about $140 billion annually required to finance the U.S. current account deficit (Feldstein, 1987).

The trend in the U.S. Trade Performance Index (TPI) from 1965 to 1985 devised by the Wharton Econometric Forecasting captures the competitive international marketing position of the United States relative to foreign industries (Wescott and Berson, 1987). The TPI is defined as the ratio of U.S. merchandise exports to U.S. merchandise imports with 1980 = 100. With rising imports and declining exports, the TPI ratio fell 47 points to 53.0 by 1985, relative to the 1980 base year, and also revealed a precipitous 40-point drop from 1981 to 1985, the period of immediate concern to this paper.

The importance of this decline in U.S. trade on black American workers is, of course, largely reflected in its impact on all U.S. workers and in the increasing role of world trade generally. The increasing integration of the world economies is reflected in the importance of world exports relative to world production, which increased from 12 percent in 1962 to 22 percent in 1984. Trade-related industries, defined as exporting industries plus import-competing industries, doubled from 10 percent of U.S. GNP to over 20 percent of GNP from 1950 to

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the present. Approximately one out of every 15 jobs in the U.S. is directly tied to exports, with every billion dollars of exports generating an average of 25,800 jobs (U.S. Dept. of Commerce, 1986; Wilson, 1988).

The manufacturing sector is of special concern for the U.S. world trade position. While one out of every 15 jobs is directly tied to exports, one out of every eight manufacturing jobs depends on exports. Since blacks are employed disproportionately in manufacturing, which has fallen from 30 percent of all GNP in 1955 to 21 percent in 1985 and is projected to fall near 15 percent of GNP by 2005, the importance of trade in manufacturing has immediate implications for black workers. The U.S. Department of Commerce has estimated that 1.8 million export-related jobs were lost from 1980 to 1984. A rough calculation would suggest that since approximately nine percent of the U.S. work force is black, approximately 163,000 direct jobs were lost to black workers as a direct result of trade-related impacts. But if black workers are disproportionately employed in industries facing the most plant closings and largest negative trade imbalances, then this number would underestimate the true number of displaced black workers.

The objectives of this paper are to obtain a more reliable estimate of the black employment consequences of the decline in U.S. net exports from 1982 through 1985 and to outline the implications of the trade decline on black earnings and employability. The 1982 to 1985 period was chosen for two reasons. First, this period covers the years of sharpest trade decline and largest appreciation of the dollar; and second, the best input-output estimates needed to conduct the analysis were available in those specific years.

Methodology

While rough approximations are possible in estimating trade-affected employment changes for black workers, an improved estimate is possible by investigating the actual buying and selling of goods and services, between industries in the domestic economy, that are required to produce exports and to sustain import replacement production. Estimates on the total direct plus indirect output levels required to support trade-related production can then be merged with the accompanying labor inputs for each industry and percentage of black workers by industry to arrive at reasonable black trade employment estimates. The present study utilizes an input-output approach to explore the impact of changes in export sales and imports in 150 three-digit SIC nonservice industries in agriculture, mining, and durable and nondurable manufacturing between 1982 and 1985.

While direct employment calculations would investigate the employment impact on, say, steel workers of higher steel imports, total direct plus indirect labor calculations investigate the impact on steel workers of trade changes not only in the steel industry but across all other customer industries which *purchase* steel products as inputs. Thus, declines in heavy steel consuming industries like auto production and durable equipment production, for instance, would of course also affect "own" steel employment levels in addition to any changes in the steel trade position alone.

The model developed in this paper, therefore, differs from studies which look only at direct black labor impacts (Lawrence, 1980) as well as other input-output studies which investigate direct-trade employment in an industry and its imputed indirect employment occurring *elsewhere* in the economy (Krause and Mathieson, 1971). Those types of studies attribute to the export or import industry indirect job losses and gains actually occurring elsewhere in other industries that sell or supply to it. Studies of this type would aggregate, for instance, both lost direct steel employment due to declines in steel trade position as well as impute to steel changes in employment in *other* industries which steel purchases from. Our interest in this paper, however, was in isolating and assigning employment changes, totally occurring *within* each industry, and stemming from the changing trade position of each industry and its customer industries.

More specifically, our empirical estimates are derived as follows: Given the input-output matrix for 1982 (A_{82}) and the matrix for 1985 (A_{85}), we first compute the Leontief matrices $(I-A_{82})^{-1}$ and $(I-A_{85})^{-1}$ where the elements in each row show the total direct-plus-indirect sales requirements of a given industry as an input to all of its other individual customer industries. We then post multiply each row of these Leontief matrices by the column vectors of U.S. exports (X) and imports (M), respectively, for each of the two years to obtain a column vectors **E** and **R** (measured in dollars) showing a listing of the total sales requirements for each of the 150 industries. Each element in both **E** and **R**, therefore, measures the sales needed to cover export- and import-competing output levels:

$$\text{(1a)} \quad (I-A_t)^{-1} X_t \quad = \quad \mathbf{E}^x_t$$

where each element e_i^x = of the column vector	direct plus indirect output ($) required from industry (i) to meet export needs throughout the economy in time t, i = 1 ... 150.

And correspondingly,

(1b) $(I-A_t)^{-1} M_t \quad = \quad \mathbf{R}^m_t$

where each element r_i^m = of the column vector	direct plus indirect output (\$) required from industry (i) to meet import replacement needs throughout the economy in time t.

The resulting indirect plus direct requirements **E** and **R** vectors are then transposed to form row matrices $\mathbf{E}^T$ and $\mathbf{R}^T$ which are then multiplied by a diagonal matrix **L** of labor-output ratios in each industry to obtain the *total* labor requirements for each industry to support the level of exports and import-replacement throughout the economy. That is,

(2a) $E^{T,X}_t L_t = \mathbf{L}^x_t$

Likewise,

(2b) $R^{T,M}_t L_t = \mathbf{L}^M_t$

Where each element l_i^t of the **L** row vectors	= total direct plus indirect labor required in each industry i to produce total sales requirements in industry i for exports (X) and import replacement (M), respectively

Needless to say, each element of the total export labor requirements matrix ($\mathbf{L}^x$) for any given year measures the total direct plus indirect employment for each industry as a function of exports across all of its customers' industries (including itself). The total import labor requirements for each industry, however, is a somewhat suppositional total showing the labor levels we would observe if imports in its own industry and in its customer industries were produced domestically and not abroad. Changes in imports over time, however, do translate into actual domestic production and employment shifts.

Finally, each element of $\mathbf{L}^M$ and $\mathbf{L}^x$ is postmultiplied by the diagonal matrix of the percentage of black workers $\mathbf{W}_B$ in each industry i = 1...150 to obtain the total direct plus indirect black labor content (w_b) in exports and import-replacing production for 1982 and 1985 for each industry:

$$\text{(3a)}\quad L^{X}_{t}(W_B) = W^{X}_{t} = [w_{b,l} \ldots w_{b,n}]_t$$

$$\text{(3b)}\quad L^{M}_{t}(W_B) = W^{M}_{t} = [w_{b,l} \ldots w_{b,n}]_t$$

where each $w_{b,i}$ = total direct plus indirect black labor used in each industry i to produce either export sales (x) or import-replacing output (m) in time period t.

The total black labor requirements for exports and import-replacing output for 1982 and 1985 were then aggregated down from 150 industries to 23 industries for ease of presentation.

Data

The Office of Economic Growth, U.S. Bureau of Labor Statistics, U.S. Department of Labor, supplied the 1982 and 1985 input-output tables which constituted the raw data from which equation systems 1-3 of this study were generated. The Office of Economic Growth at BLS also supplied the author with total imports, exports, employment, and output (in constant 1982 dollars) across 275 three- and four-digit SIC industries for 1977-1985.

Results

Table 1 shows the total direct plus indirect job losses for black workers due to economywide export declines and import increases and the total direct plus indirect job gains due to export increases and import declines. For any industry i, the four possible black employment changes from 1982 to 1985 are,

(4a) $(w^{x}_{b,i})_{85} - (w^{x}_{b,i})_{82} < 0$ (Decline in black export workers)

(4b) $(w^{m}_{b,i})_{85} - (w^{m}_{b,i})_{82} > 0$ (Black job losses to greater imports)

(4c) $(w^{x}_{b,i})_{85} - (w^{x}_{b,i})_{82} > 0$ (Gain in black export workers)

(4d) $(w^{m}_{b,i})_{85} - (w^{m}_{b,i})_{82} < 0$ (Black job gains due to decline in imports)

Total net job loss for black workers was then computed for each industry by subtracting total job gains from total job losses for each industry. The largest total net trade employment losses for black workers from 1982 to 1985 occurred in (1) electrical machinery,

TABLE 1

Gains and Declines in Total Black Labor Requirements (Direct and Indirect) for Export Sector and Import-competing Sector

	Job Loss Due to		Job Gains Due to		Net Job (Loss) or Gain	Average Weekly Wage ($)
	Export Decline	Import Increase	Export Increase	Import Decline		
Agriculture	5,889	2,770	—	—	(8,659)	213
Mining	1,081	293	—	—	(1,374)	504
Manufacturing						
Durable goods						
Lumber and wood products, except furniture	1,063	9,471	—	—	(10,534)	317
Furniture and fixtures	170	3,104	—	—	(3,274)	277
Stone, clay, glass, and concrete products	144	5,634	—	—	(5,778)	411
Primary metal industries	12,198	—	—	4,803	(7,395)	481
Fabricated metal industries	2,845	—	—	2,378	(467)	395
Machinery, except electrical	6,406	12,748	—	—	(19,154)	418
Electrical machinery, equipment and supplies	—	52,797	5,461	—	(47,336)	376
Transportation equipment	—	19,940	7,596	—	(12,344)	538
Professional and photographic equipment and watches	1,954	1,952	—	—	(3,906)	370
Toys, amusements, and sporting goods	290	1,331	—	—	(1,621)	260
Miscellaneous and not specified manufacturing industries	—	4,767	1,039	—	(3,728)	309

Nondurable goods						
Food and kindred products	—	—	1,700	2,523	4,223	336
Tobacco manufactures	482	—	—	230	(252)	424
Textile mill products	1,475	30,156	—	—	(31,631)	257
Apparel and other finished textile products	1,463	26,639	—	—	(28,102)	203
Paper and allied products	1,000	5,053	—	—	(6,053)	458
Printing, publishing, and allied products	—	3,794	630	—	(3,164)	360
Chemicals and allied products	7,531	—	—	1,148	(6,383)	481
Petroleum and coal products	634	274	—	—	(908)	595
Rubber and miscellaneous plastics products	—	8,140	359	—	(7,781)	346
Leather and leather products	275	8,629	—	—	(8,904)	215
TOTAL	44,900	197,492	16,785	11,082		

NET DIRECT + INDIRECT JOB LOSS: 242,392 − 27,867 = 214,525 equipment and supplies (47,336); (2) textile mill products (31,631); (3) apparel (28,102); (4) transportation equipment (12,344); and (5) primary metal (7,395). Our results also show that these industries are also the ones most heavily affected by output declines resulting from rising imports. The one exception is the Primary Metal industry whose primary trade employment impact was the export decline in its customer industries. While most of the import-impacted industries had a significant proportion of total employment loss stemming from direct labor declines, Textile Mill Products had most of its import-impacted employment decline resulting from its linkage to rising imports in its related customer industries, most notably Apparel and Finished Textile Products.

Across all agricultural and mining and manufacturing industries, 45,000 black workers lost jobs due to export declines throughout the economy. Most employment losses, however, occurred as a result of *rising imports*. Nearly 200,000 black workers across the nonservice sector of the economy lost employment due to rising imports throughout the economy. In sum, nearly 4.5 jobs were lost in import-impacted areas for every 1 job loss resulting from declining exports. Additionally, for every 1 direct job loss, there were 1.7 total direct plus indirect job losses due to international trade. Total job losses from all trade sources amounted to 242,400 black workers while job gains from all sources amounted to 28,000 black workers, resulting in a total net employment loss of 214,525 jobs in the nonservice sector. Of this amount there were 135,000 direct jobs lost, or 63 percent of the total.

The disproportionate effect of imports on employment of black workers is consistent with the Lawrence (1980) finding regarding direct black employment losses in 1976. He noted that black Americans have occupational characteristics that make them more likely to be employed in import-competing industries since a disproportionately low number of black manufacturing workers are professionals, managers, or skilled craft workers and a disproportionately high number are operatives and laborers. In fact, the percentage of black operatives, laborers, and fabricators is 1.6 times that of white workers (Current Population Survey, unpublished data, 1980-1987). In this same vein, Duchin and Lange (1988) have confirmed that imports require proportionately more operatives and laborers and fewer professionals and farmers than does exported merchandise.

It is not surprising, therefore, that on comparing the fraction of black workers in the largest trade employment deficit industries with the largest trade employment trade surplus industries (where trade employment for each industry is defined as Export Employment-Import-Replacing Employment), nine of the 12 leading trade employment surplus industries employed a percentage of black workers *significantly below* the average percentage of black workers in the labor force, while 10 of the 12 largest deficit industries employed black workers at a rate *at or above* their average in the total work force.

Earnings

Many of the implications for earnings follow almost immediately. Since black workers are disproportionately employed in import-sensitive industries and occupations, and since black workers are disproportionately the lower-wage earners within those industries and occupations, any improvements in the value of exports will have a much smaller impact on black earnings and employment compared to white earnings. Consistent with this, Duchin and Lange (1988) have also shown that jobs gained through increased exports are less likely to be lower-wage jobs (under $300 per week) and more likely to be higher-wage jobs ($599 per week and above).

Black males earn less than white males in all industries; however, black men have relatively higher earnings in durable and nondurable manufacturing than in professional services and retail trade. Black males' earnings are 18 percent greater in mining and manufacturing than their all-industry average (Vroman, 1989). Black males' hourly earnings in durable goods in 1987 were $7.72 and $6.64 in nondurable goods. In contrast, black males' wages were $5.15 in business repair services, $4.45 per hour in retail trade, and $5.56 in professional services in 1987 (Current Population Survey, unpublished data, 1980-1987).

Table 1 shows that with two exceptions (furniture and fixtures and toys and sporting goods) all industries in the durable goods sector pay more than the 1985 all-industry average weekly wage of $297. Likewise, all industries in the nondurable manufacturing sector, except textile and leather products, pay above the all-industry average. The decline in durable manufacturing aggravated, in part, by the trade decline led to a .95 to .83 drop in the black/white percentage of hourly paid workers from 1980 to 1987. The trade impact is also reflected in the substantial loss of nearly 150,000 higher-paying black male jobs over this period in durable manufacturing. Hourly workers are particularly important since 83 percent of all black males in manufacturing are hourly paid workers compared to 65 percent of white males.

Overall, the proportion of black males in higher-wage manufacturing positions declined from nearly 30 percent in 1981 to 24 percent in 1987, just six years later. Recent research has confirmed that, on balance, the growth in employment of wage-earning black men in the '80s has been greatest in the poorest wage sectors of the economy (Maclachlan, 1988; Vroman, 1989). Retail trade, for example, has added a net of 270,000 jobs for black males while business repair services have increased black male employment by 110,000, with low hourly wage nonprofessional black male employment in professional services increasing by 96,000. These sectors have been cited by Bluestone and Harrison as "high inequality" industries, with black workers being disproportionately concentrated in the low earnings tail of the distribution.

The concentration of trade-displaced black workers particularly in the import-competing sectors of the economy has other wide-ranging implications. The 12 largest black employment deficit industries in 1985 are also the ones that rank lowest in R&D expenditures and average years of educational attainment. The trade employment surplus industries, on the other hand, have proportionately more skill-intensive workers with higher R&D activity (Kasarda, 1987; Thurow, 1987). Overall, the education levels in the most trade-affected industries were, on average, over 15 percent lower than the average for the most favorable industries. Branson and Love (1987) found that the key factors associated with manufacturing industries having lower sensitivity of employment changes to exchange-rate movement were the percentage of the population with four years or more of college, and urban areas having higher than average per capita expenditures on public secondary schools. The critical need for investments in improved schooling and training in central cities where blacks are concentrated is clearly reinforced by this result.

The growth in black family income inequality, which has been documented in several studies is, in part, consistent with the declining trade position of U.S. import-competitive firms which employed disproportionately large amounts of black workers (Conrad, 1983; Burnim and Rasmussen, 1982; Gottschalk and Danziger, 1987). As we and others have argued (Thurow, 1987; Tschelter and McMahon, 1986), both exporting and import-competing firms pay higher than average wages compared to the economy as a whole. Thus, with rising trade deficits throughout the '80s, trade-impacted industries have at least partially contributed to greater black earnings inequality as employment has shifted from higher wage-affected industries to lower paying jobs in the service sector.

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DISCUSSION

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The Scott paper is critical of recent literature which estimates a cost per job saved by protection.[1] That literature takes a classical economic approach which Scott dislikes. Yet his own paper is classical in spirit; it basically adopts the old infant-industry argument for protection.

According to the infant-industry approach, industries may have latent supply curves which would allow them to be competitive if only they could achieve a certain level of production and "learn by doing." Protection, which allowed such production, could be justified if future benefits (discounted at market interest rates) outweighed today's deadweight loss. Scott applies this idea to productivity growth in textiles and apparel.

However, the infant-industry argument must overcome two criticisms which are not discussed in the Scott paper. First, it is generally the case that a direct subsidy (rather than protection) will lower today's deadweight loss. Hence, there needs to be a discussion of why policy makers should opt for a second-best protectionist approach. Second, if the present value of tomorrow's gains outweigh today's losses, why can't the infant finance its learning by doing privately in the financial markets?

I have a problem with Scott's assumption that quotas that give rents to foreigners are implicitly achieving some unstated foreign policy goals. Governments often create rents that benefit no one but the recipients. Examples include the allocation of broadcasting licenses and the ever-famous New York City taxi medallions. In both cases, governments could have auctioned off the valuable rights they created, but chose not to do so. Scott's use of comparative productivity growth trends to search for learning by doing is also troublesome.

More fundamentally, the cost per job saved approach is a subcase of the larger "job counting" literature which attempts to attribute

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employment to exports and import substitutes. The difficulty is that overall employment is essentially a macro phenomenon. If the monetary authorities are happy with the current unemployment rate, and if protection then adds jobs to a particular industry, restrictive macro policy must offset these gains with job losses elsewhere. Thus, protection does not really create jobs, it mainly moves them between sectors. Qualifications can be added to deal with labor immobility, but these involve second-order effects.

The Handy paper also involves job counting but the approach is more defensible since Handy is looking only at a subgroup in the work force—black workers. Even so, Handy needs to focus more heavily on the wage effects of trade. His data should allow more precise estimates of the effect of trade displacement on average black wages and on the black/white wage ratio.

It would also be helpful if Handy used input-output relationships from only one year to compute his employment and wage estimates. Because he uses input-output tables for two years, trade effects are confounded with the influences of changes in labor productivity and interindustry relationships.

Dickens' paper deals with the potential distorting effects of wage differentials on trade. If wage premiums have nonmarket components, then there could be arguments for protection based on deviations between the marginal productivity of labor in different uses. However, Dickens begins by showing that if the wage premiums are exacted as some form of de facto profit or revenue sharing, no distortions need arise. Essentially, as in the well-known Weitzman "share economy" model, firms make their marginal decisions on the pure wage element of pay, not the share. Having made this demonstration, Dickens then shows that if workers don't know what the share is in their firm, and if they look at wages at other firms for clues, distortions will creep back in. But several criticisms can be made of his approach.

First, Dickens' model suggests that sharing via looking at other firms produces a kind of national sharing. Wages become dependent on aggregate profits. So wage changes ought to be highly sensitive to changes in profits. Yet aggregate wage-change equations do not support this prediction of the model.

Second, Dickens suggests that share elements of pay are the result of worker notions of fairness. Yet the idea of sharing in the risks of profit movements is often resisted by workers. Indeed, the Kahneman et al. study cited by Dickens indicates that unless there is an explicit "bonus" element in pay, people generally do not think pay cuts due to reduced profits are fair. Thus, if wage premiums are reflections of worker demands for fairness, they are probably best modeled as markups rather than as variable shares.

Third, labor costs as a proportion of total costs are often relatively small at the industry level because of intermediate input costs. In the automobile industry, for example, the labor cost ratio is roughly one fourth. A 10 percent wage premium, if passed through fully, will raise prices only 2.5 percent. Thus, the scope for labor cost premiums to distort trade is likely to be small.

Endnotes

[1] These comments are based on the written versions of the papers presented at the December 1989 meetings. Final published versions may reflect changes suggested by the discussants or may be otherwise revised.

XXIII. POSTER SESSION I

The Impact of Collective Bargaining on Faculty Salaries

JAVED ASHRAF
University of Hartford

This article represents an extension of a recent study by Barbezat (*Industrial and Labor Relations Review*, Vol. 42, No. 3) who found little evidence of union influence on faculty salaries. As opposed to Barbezat, this study found the union wage premium to be a moderate and statistically significant 4.40 percent. Across faculty subgroups, the differential ranged from −7.63 percent to 13.07 percent. Faculty characteristics were found to be generally less important in influencing salaries in the union sector than among unorganized campuses. Rewards from unionism appear to increase with rank and are higher for tenured faculty--a refutation of the Freeman thesis that unions reduce wage inequities. There appears to be little discrimination by race, but males gain somewhat more than females from collective bargaining.

Crossing the Picket Line: An Analysis of Player Choice During the 1987 National Football League Strike

CYNTHIA L. GRAMM
University of Iowa

JOHN F. SCHNELL
Syracuse University

In this paper, we test a general model of a worker's decision to participate in a strike using data on NFL players during their 1987 strike. We find that a player's willingness to return to work was positively related to the number of team mates who preceded him in returning to work, whereas players, particularly minorities, were more likely to remain on strike if their team union representative was a member of the same racial group. Willingness to return to work varied positively with a player's age, time remaining in his contract, and relative salary but varied inversely with salary and professional football experience.

Union Corporate Campaigns: A Market Model Analysis of Campaign Announcements and Tactics

Paul Jarley
University of Iowa

Cheryl L. Maranto
Marquette University

Employing standard event analysis techniques, union corporate campaign chronologies were combined with daily stock returns to examine the impact of campaign events on shareholder equity. The results suggest that campaign announcements made after the initiation of a strike have a positive and significant impact on shareholder equity. Such announcements may be viewed as "acts of desperation" by investors. Announcements made in the absence of strikes have a negative impact on stockholder equity. This result may be due to investor expectations concerning campaign costs or their perceptions that campaign announcements signal an increased likelihood of strikes. Preliminary estimates of a model which includes information on specific campaign activities suggest that the market is indifferent to subsequent campaign events.

An Economic Analysis of Flexible Benefits

William Y. Jiang
Columbia University

This is an attempt to compare in economic terms the traditional benefit system with the innovative flexible benefit system. Following a brief discussion of the rationale of employee benefits in general, the paper identifies changes in demographic composition in the work force as the major threat to the effectiveness of the traditional benefit

system. The paper proceeds to illustrate the inefficient nature of the traditional system in the face of an ever more heterogeneous work force and to show why flexible benefits have the potential to increase economic efficiency and employee satisfaction while helping the employer to contain or reduce benefit costs. Finally, some propositions are formulated based on the discussion.

The Determinants of U.S. Foreign Production: Unions, Monopoly Power, and Comparative Advantage

Thomas Karier
Eastern Washington University

Based on an analysis of industry by region data the author finds little evidence that U.S. unions have been a significant factor in the decision of U.S. firms to produce abroad. Additional evidence suggests that U.S. foreign production had a negligible effect on the unionization rate in the United States. The results do indicate that comparative advantage, monopoly power, and foreign tariffs are important determinants of U.S. production.

Campaign Tactics and Certification Election Outcomes

Timothy J. Keaveny
Marquette University

Joseph Rosse
University of Colorado

John A. Fossum
University of Minnesota

This investigation sought to increase our understanding of the impact of campaign tactics on voting in a certification election and on variables previous research has found related to employee support for unionization. Variables are job satisfaction, general union attitudes, feelings of powerlessness, and union instrumentality. The following questions were addressed: are fairness and vigorousness of election campaigns or perceived unfair labor practices associated with voting for or against the union or with variables related to support for unionization?

Eleven certification elections were studied. Data were collected both prior to, and following, certification elections. Preelection and postelection questionnaires were completed by 127 individuals.

Perceived unfair labor practices appear to have a negative effect on voting for union certification. Perceived fairness of the union campaign appears to be positively associated with voting for the union after having signed an authorization card, while perceived fairness of the employer campaign is negatively associated with voting for the union after signing an authorization card. Fairness of the union campaign is positively associated with postelection general attitudes toward unions and perceived union instrumentality after controlling for the respective preelection attitudes. Perceived unfair union practices appear to be positively associated with both postelection overall union attitudes and postelection union instrumentality.

Mine Foremen as "Union Men": A Unique Class of Employee in the Central Pennsylvania Bituminous Coal Field, 1940-1980

Barry P. Michrina
SUNY—Binghamton

Central Pennsylvania mine bosses responded poorly to the organizing efforts of the 1940s. Most were afraid of company retribution; those who braved the threat and joined the UMWA's District 50 did so for benefits, not for airing grievances. By the 1960s, mechanization had greatly increased the number of foremen and had increased both responsibilities and restrictions. In the two companies studied, modern foremen organized their ranks several times to voice collective opposition to treatment by upper management. This was in spite of their exclusion from the protective arm of the NLRB. However, they had ambiguous feelings about unions which would have precluded their calling themselves "union men."

The Social Construction of Token Lawyers

Thomas F. Reed
Shannon Ratcliff
Texas A&M University

Deborah Jensen
IBM

Prior research on organizational tokens has tended to focus on tokenism from the viewpoint of the dominant majority. This paper develops and tests a model of tokenism that encapsulates three earlier theories into a new perspective based on social construction and the perceptions of minority individuals. The theory posits that organizational, job, and individual difference variables affect minorities' perceptions of being in a token role. The theory is tested on a sample of 397 women lawyers. Statistical support was found for nine of the thirteen hypotheses.

The Impact of Strategic Filings on Unfair Labor Practice Growth

Kathryn J. Ready
University of Wisconsin—Eau Claire

This paper builds on earlier work by Roomkin (1981) and Flanagan (1987) to explain Unfair Labor Practice (ULP) growth. I developed a measure of strategic filings and used time series analysis to determine why ULPs are increasing. I showed that more of the increase in meritorious charges can be explained by jurisdictional expansion and economic variables than can the increase in total ULPs. This suggests that strategic filings are a contributing factor to ULP growth and are increasing faster against unions than against employers. It appears that employers and individuals have recognized the benefits to be derived from strategic use of the NLRB.

The Effects of Fact-Finding and Final-Offer Issue-by-Issue Compulsory Interest Arbitration on Teachers' Wages, Fringe Benefits, and Language Provisions: A Comparative Analysis of New Jersey and Connecticut, 1980-86

EDITH DUNFEE RIES
Verona (N.J.) Education Association

This comparative study focused on bargaining outcomes achieved by teachers in jurisdictions mandating final-offer issue-by-issue compulsory arbitration and fact-finding as a means of resolving collective bargaining disputes in Connecticut and New Jersey, respectively. The sample under study included 50 randomly selected K-12 school districts. Data were collected by means of contract analysis and questionnaire and included salaries, fringe benefits, and language provisions. The research advances understanding of bargaining outcomes for teachers in fact-finding and interest arbitration states and should have implications for school boards, teacher unions, and state legislatures searching for alternatives to strikes in public sector teacher bargaining.

An Empirical Analysis of Workforce Reduction in Unionized Virginia Manufacturing Firms

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Virginia Tech

This study provides an empirical analysis of the impact of a number of variables on the probability of layoff and downsizing among unionized manufacturing firms in Virginia. Almost 37 percent of the respondents had engaged in a layoff, and 51 percent had downsized during the period of January 1986 to March 1987. The results indicated that the probability of workforce reduction was greater if the facility was facing unfavorable economic conditions, located in a smaller city, and had been operating for less than 20 years.

Determinants of Grievance Outcomes in a Nonunion Setting: Some Evidence from Virginia

Terry H. Wagar
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Jerald F. Robinson
Virginia Tech

This study examines, using data collected from an agency covered by the state of Virginia grievance process, the impact of a number of variables on grievance outcomes for the period of 1979 to 1986. The employer was successful in about 51 percent of the cases. Grievants were less likely to receive favorable outcomes if their grievances were decided before 1984, the subject matter of their grievances involved disciplinary actions, or the complaint was resolved at Step 1 of the grievance procedure. We did not find any significant effects for gender, occupation, or time to decision.

Other Poster Papers

A Longitudinal Analysis of Organized Labor's Role in Politics

Marick F. Masters and Robert S. Atkin
University of Pittsburgh

A Framework for Analyzing the Impact of Europe 1991 on Labor Unions

Marick F. Masters
University of Pittsburgh

John Robertson
Texas A&M

XXIV. POSTER SESSION II

Why Gainsharing Works

SUSAN W. BOWIE
University of Oregon

ANN C. WENDT, Ph.D.
Wright State University

Although gainsharing plans have been used periodically in goods-producing organizations since the 1930s, usage of these plans in the service sector of the economy has been limited. This research focuses on gainsharing in a Big Eight accounting office. Four hypotheses and one proposition were tested. The findings support the following conclusions:

(1) the gainsharing cost reductions were not entirely explained by the Hawthorne effect because the initial year's reductions were maintained and improved during the subsequent years of the plan;
(2) employees are "working smarter" by virtue of more efficient work routines and decision-making processes;
(3) employees are "working harder" as evidenced by more earned service income being produced by fewer employees; and
(4) there are indications of movement from an individualistic to a group culture.

The authors gratefully acknowledge the assistance of Ron Blind and Susie Rahls at the Eugene, Coopers and Lybrand office. This research could not have been undertaken without their candor, cooperation, and interest.

"Just Saying No": Local Union Opposition to Participative Programs

ADRIENNE E. EATON
Rutgers University

This paper examines characteristics of local unions responding differently to participative programs in which their bargaining units were involved. Representatives of 86 local unions were surveyed; they were divided into three groups: those reporting a current attempt to destroy the program (8), those reporting a discontinued attempt to destroy the program (18) and those reporting no such attempt (60). Current and past destroyers shared some characteristics but also differed. Among other differences, current destroyers found programs more threatening and management less interested in the union's involvement than both other groups. Past destroyers were more involved in the program than the other two and perceived management as welcoming that involvement.

Understanding Training and Development from the Perspective of the Worker: A Case Study in Underground Mining

ROBERT A. FIGLER
The University of Akron

The process of the training and development in an underground coal mine is documented from the miners' perspective. The miners' source of control over the work process and their sense of influence and autonomy in the workplace are an outgrowth of the on-the-job learning and development occurring in the production of coal. This process instills work group cohesiveness and reinforces crew interdependency (teamwork). Job preferences and potential work crew matchups are constantly established and evaluated by the miners. Failure of management to acknowledge this process may lead to low levels of coal output (X-inefficiency). The study suggests that effective mine management must be truly collaborative simply because miners possess better job/production information than management can document.

Employee Participation and Acceptance of a Job Evaluation Plan

DANIEL KOYS AND TIMOTHY KEAVENY
Marquette University

ROBERT ALLEN
University of Wyoming

Employee participation in job evaluation decisions is often advocated. However, there may be limits to the effectiveness of participation. Questionnaire data regarding a new job evaluation plan were collected from 582 university staff employees. Lower acceptance of the plan was reported by a group of employees who had their suggestions rejected by management after they had completed job description questionnaires, attended informational meetings, and suggested ways to eliminate perceived inequities. The implication is that if employee suggestions are solicited, management must be willing to adopt those that are valid and to justify why rejected suggestions are invalid.

Executive Pay in Private Nonprofit Organizations

Michael Byungnam Lee
San Jose State University

The proposed earnings model integrates human capital, industry and geographic wage contours, organizational hierarchy, maturity, autonomy, entrepreneurship, internal labor market, compensating differentials, and CEO demographics. The analysis, based on a sample of 352 nonprofit organizations, showed that the magnitude of human capital variables shrank at the presence of the various measures for labor market constraints and organizational characteristics. The results also confirmed the industry and geographic wage contour hypotheses and Rosen's recursive chain of command technology hypothesis. The gender-based pay differential was found, but its magnitude shrank considerably in the integrated model. Thus, the traditional human capital model may overestimate the true magnitude of the differential.

Data on Occupational Fatalities Fail to Provide Evidence for Compensating Wages

J. Paul Leigh
San Jose State University

Most prior studies have used estimates from either 1-, 2-, or 3-digit industries, 37 high-risk occupations, one occupation such as police, industries and occupations in New York state, or occupations in England. The new estimates relied on here apply to 347 United States 3-digit occupations. Five different cross-sectional and longitudinal data sets for United States workers are used to test for compensating wages using both the popular industry death rates and the new occupation death rates. An unexpected result emerges: while evidence for compensating wages is apparent for industry death rates, evidence is absent for the new occupational death rates.

Dual and Unilateral Commitment: A Comparison of Operational Definitions

JOHN M. MAGEANU
Penn State Erie Behrend College

JAMES E. MARTIN
Wayne State University

This study discusses the strengths and weaknesses of various operational definitions of dual and unilateral commitment and investigates their construct validity. The data were collected at steward conferences of a large local union in the retail food industry. Our analysis supports the viability of three measures of dual and unilateral commitment: (1) the sum of the z-scores of the separate employer and union commitment measures and the difference between them; (2) comparisons of dual and unilateral commitment groups formed by cross-tabulating employer and union commitment measures divided at the median; and (3) dual and unilateral commitment scales developed for this study.

Assignment to Isolated Management Positions and Early Retirement Decisions: An Empirical Study

GENE MURKISON
Georgia Southern College

This study investigates the differences in early retirement decisions between military officers who are isolated from their immediate supervisors and those who are not. It was found that job satisfaction is more negatively significantly related to early retirement among isolates than among nonisolates and that, as managerial tenure lengthens, propensity to retire increases faster among the isolates. No significant differences were noted in role strain and retirement decision relationships between the isolated and nonisolated managers.

A Test for the Long-Run Social Cost of Unemployment Among Young Men

LEN M. NICHOLS AND ADAM SEITCHIK
Wellesley College

We developed and tested a measure of the long-run cost of unemployment based on lost gross wages. The naive model regresses wages in year t on unemployment experienced in year t-10 and a vector of controls. Subsequent corrections were made for unmeasured heterogeneity using fixed effects, industry wage differentials, and Markov dependence. Using pooled data from the NLS young men's cohort (1966-1981), the naive model suggests a 3 percent wage gap 10 years after experiencing a 15-week unemployment spell; unmeasured heterogeneity corrections alone account for the entire gap. Subsequent research will estimate the time path of wages during the 10 years following an unemployment spell.

Worker Attitudes, Supervision and Productivity in Service Industries: A Study of the U.S. Postal Service

J. R. NORSWORTHY, SHOW-LING JANG AND DOUGLAS REBNE
Rensselaer Polytechnic Institute

This paper introduced competing hypotheses concerning the effects of varying levels of supervision on indicators of worker attitudes and tested them in the context of a model of attitude formation and productivity effects. Together with a cost function and demand equations, the attitude formation model was simultaneously estimated for cross-section data comprised of 200 Management Sectional Centers of the U.S. Postal Service. The results indicated that supervision plays an important and complex role in attitude formation, one not accounted for by either Taylorist or human resource management perspectives. Further, the cost elasticity of the attitude indicators was larger than that found for the U.S. auto industry (as well as U.S. or Japanese manufacturing as a whole). This highlights the importance of socioeconomic research on worker attitudes in service industries.

Five Year Evaluation of 401(K) Plan for Bargaining Unit Personnel

ALLEN J. PANERAL
IMC Fertilizer, Inc.

This study provides an analysis of the voluntary participation of bargaining unit personnel in a deferred 401(k) savings plan which was proposed to the company by its union during contract negotiations and is sustained solely by employee contributions. It compares the percentage of initial employee participation to the participation of new hires during the interval studied. It also provides an analysis of the reasons for withdrawal from the plan during the same period. Data are also presented relating to the age of the employee and employment service factors of participants at enrollment.

Occupational and Task Correlates of Robotics-related Accidents

DOUGLAS REBNE
Rensselaer Polytechnic Institute

As part of ongoing research concerning industrial safety in highly automated settings, this presentation examined key correlates of robotics accidents and offered a critique of purely technical approaches to safety which appear to have evolved from the "accident-prone" worker thesis. An analysis of detailed reports from the U.S. and Japan indicates that most accidents befall workers whose jobs are directly related to robotics work and under nonroutine task conditions. It was argued that, while advanced technical approaches may have a positive effect on safety under routine task conditions, such mechanisms may have a negative effect on general cognitive attention and the propensity to engage in hazardous behavior under exceptional task conditions (when most accidents appear to occur). Research implications were then considered.

Sources and Availability of Disability Income: How These Differ for Different Workers

KAREN ROBERTS
Michigan State University

The goals of workers' compensation programs are to provide disabled workers with adequate and equitable benefits that maintain work incentives. Many disabled workers are entitled to multiple benefits from additional disability insurance programs; benefits that are often distributed independently of one another. This study addresses two questions: What benefits are available and how are they distributed?; and, How does benefit coordination affect income replacement? From data from Michigan workers' compensation files, preliminary results indicate that after workers' compensation, wage continuation is the most frequently used benefit source and that the availability of additional income rises with the wage rate.

Union Adaptations: A Response to Decline

KAY STRATTON-DEVINE
University of Alberta

This field study investigated union mergers and affiliations as a means of coping with union decline. As such, they are described in terms of their definition, form, motivation, and process. Additionally, a theoretical model building on the work of Aldrich (1979) is offered as a means of differentiating between these two forms of coalition building. Finally, avenues for further research are presented.

Incentive Pay for Professionals: An Empirical Assessment

PAUL M. SWIERCZ
W. T. Beebe Institute of Employment Relations

MARJORIE ICENOGLE
Georgia State University

This study presents an empirical analysis of professional employee

desires regarding continued participation in an incentive pay program. Respondents in this public service agency were requested to indicate their support for incentive pay reinstatement following a two-year trial of the program. Despite a very high incentive earnings rate (73.6% earned the maximum), only a slight majority expressed a desire for reinstatement. Discriminant analysis is used to identify those variables which best predict a vote for incentive pay reinstatement. Implications of these findings for professional employee incentive plans are discussed.

Climate and Process Factors in Effectiveness of Labor-Management Committees: Testing a Model

LANE TRACY
Ohio University

RICHARD B. PETERSON
University of Washington

Over 400 participants in various labor-management committees at Pacific Northwest Bell were surveyed with regard to the climate surrounding their committee, decision-making processes used, and committee effectiveness. LISREL was employed to test the fit of the data to a model derived from prior studies of integrative bargaining. The data appeared to support the model, indicating that a cooperative climate (indicated by trust, friendliness, respect for the union, personal recognition, and top-level support) and problem-solving processes, such as discussion/exploration before stating a position and taking a long-term view, are related to committee effectiveness.

XXV. DEVELOPMENTS IN THE NORTH AMERICAN LABOR MARKET

From School to Work: The Effect of Minimum Wages on the Time to First Job

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There is broad agreement among economists that increases in the level or coverage of minimum wage laws decrease employment among teenagers. Previous studies have established several additional stylized facts. For example, Welch and Cunningham (1978) find much larger disemployment effects for 14- and 15-year-olds than for 18- and 19-year-olds. Meyer and Wise (1983) find larger effects on blacks and high school dropouts. These studies highlight the fact that demand side considerations lead us to expect that workers who would be paid the least in the absence of a minimum wage suffer the largest employment losses.

On the supply side, Brown, Gilroy, and Kohen (1982, 1983) indicate that despite disemployment effects an increase in the minimum wage would result in no change in the measured unemployment rate for teenagers, because most of the "disemployed" would withdraw from the labor force. Ehrenberg and Marcus (1980, 1982) find that an increase in minimum wages increases the probability that enrolled (in school), employed, low-income whites will leave school to take employment. However, it also increases the probability that enrolled, employed, high-income whites will withdraw from the labor force. They do not find any similar effects for blacks.

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In this paper we use panel data from the National Longitudinal Survey of Youth to continue to examine the supply side effects of the minimum wage. We test the hypothesis that the effect of the minimum wage on the time to the first job after leaving high school increases with the family's socio-economic status, other things being equal. We argue that this would suggest that minimum wages affect labor supply by causing those with high opportunity costs to curtail job search.

The Minimum Wage and Job Search

A higher minimum wage will clearly affect the probability of employment by reducing the availability of low-wage jobs. The better the wage-offer distribution from which an individual would draw in the absence of a minimum wage, the less important this demand side effect will be. Holding other observables constant, we would expect individuals from more favorable socioeconomic backgrounds to face better distributions.

Search theory suggests that a higher minimum wage will also affect the supply of labor, through two channels. First, the higher minimum wage improves the distribution of wages facing the individual in such a way as to increase the probability that the individual will accept any offered job. Second, the reduction in the number of low-wage jobs which follows an increase in the minimum increases the effective cost of search. Individuals with higher opportunity costs of search time, or equivalently, with better non-employment opportunities will be more likely to withdraw from the labor force in the face of the higher minimum. We expect individuals from more favorable socioeconomic backgrounds to have higher opportunity costs.

Therefore, while demand side considerations would lead us to expect the minimum wage to have a greater effect on individuals from lower socio-economic groups, supply side considerations could attenuate this effect.

The Data

The National Longitudinal Survey of Youth (NLSY) began in 1979 with two groups of 6398 males and 6398 females between the ages of 14 and 21. The participants have been resurveyed in each subsequent year. In order to construct our sample, we began with the original 6398 males, and excluded those with health problems, those in the armed forces, and those with severe data problems. Females were excluded. The remaining group was followed until they began their first job after high school. By 1982, there were 2602, non-missing durations of this first unemployment spell, measured in days.

The survey data were merged with community data for each person's county of residence from the NLSY Geocode data. Minimum wage levels were collected from the Bureau of Labor Statistics' *Monthly Labor Review*. The nominal minimum wage is deflated using the state average hourly earnings in manufacturing. Table 1 lists several of the variables which are included in the work reported below.

TABLE 1

Variables

	All			Black		
	Mean	Min	Max	Mean	Min	Max
Exogenous Individual Characteristics						
Father's Top Grade in 1979	11.1	0	20	10.3	0	20
Black	.25	0	1			
Hispanic	.16	0	1			
Total household income less respondent's income, $1000's (truncated)	17.4	.14	75.0	12.6	.15	73.0
Anyone in household receives welfare or public assistance	.16	0	1	.26	0	1
Endogenous Individual Characteristics						
Time to First Job (truncated at 365 days)	51.5	0	365	67.1	0	365
Time to First Job	63.4	0	2530	82.44	0	1398
Ever Attended College	.35	0	1	.31	0	1
Completed highschool	.75	0	1	.74	0	1
Community Characteristics						
Average Minimum Wage over period from end of school to first job	2.97	2.10	3.85	2.99	2.30	3.35
Average Hourly Earnings in State over same period	6.98	3.51	11.31	6.65	4.12	10.99
Average national unemp. rate over period	6.2	5.3	9.8	6.7	5.6	9.0
Crimes per 100,000	5.8	0	13.7	6.6	0	13.8
Per capita Money Income, 1979, $1000's	7.1	3.9	12.6	6.9	3.9	12.3
Percentage Poor, 1979	13.2	3.0	34.7	15.9	3.5	33.4
Percentage Black, 1980	14.4	0	70.2	27.5	.5	70.0

We propose to use family income, father's education, and welfare recipiency as measures of socio-economic status. The annual income data being quite noisy and often missing, we take the average family income, excluding respondent's income, over the four years. Income is truncated at $75,000, but this problem affects only a very small number of observations.

We chose to focus on the length of time to the first job after leaving high school for two reasons. First, we believe that difficulty in obtaining employment after leaving school may persist into later life, so that this first unemployment spell is of interest (c.f. Lynch, 1985). Second, we avoid as much as possible statistical problems (especially identification) associated with incorporating past employment histories. We assume instead that employment while in school is qualitatively different from employment after leaving school, so that we are starting at the beginning of each person's post-school employment history. We control for job experience while in school by including the total number of weeks worked in the three years prior to the year of school leaving.

More than half of the spells last less than one week, which probably indicates that most teenage men find jobs before they actually leave school. A potential problem with examining the first nonemployment spell is that some people in our sample will be taking summer jobs before going to college and some will exit unemployment directly into college. If there were many people who remained unemployed during the summer after high school and enrolled in college in the fall, we would expect to see a jump in the empirical hazard rate for ending a spell after, say, 10 weeks. The empirical hazard (not shown) gives us no immediate cause for concern.

Results

Table 2 gives simple correlations between the time to first job and personal and community characteristics. The average minimum wage, computed over the duration of the time to first job, has a negative correlation with durations in the raw data, as do average hourly earnings, average national unemployment and the annual time trend.

Table 3 reports selected parameter estimates from OLS models of the log of duration. These models do not take into account time varying covariates or censored observations, but they do provide a convenient summary of the relationships observed in the data. The specification may be regarded as a reduced form since we have not included endogenous variables like the top grade upon leaving school and marital status. In addition to personal and community characteristics, we include the average minimum wage, hourly earnings and the national unemployment rate defined over the length of the spell of unemployment, as well as an annual time trend.

The models of Table 3 include interactions of the minimum wage variable with our indicators of socio-economic status: levels of father's

TABLE 2

Simple Correlations Between Time to First Job and Personal, and Community (County) Characteristics

Personal		Community, n = 2452	
Father's Top Grade n = 2254	−.199 (.0001)[1]	Median Age	−.030 (.130)
High School Graduate n = 2578	−.267 (.0001)	Per Capita Income	−.043 (.130)
Ever Attended College n = 2602	−.120 (.0001)	Population	.025 (.216)
Black n = 2566	.097 (.0001)	Percentage Black	.066 (.0008)
Hispanic n = 2563	.022 (.056)	Percentage Hispanic	.021 (.289)
Married n = 2577	.097 (.0001)	Percent Urban	−.006 (.745)
Dependents n = 2463	.130 (.0001)	Crimes per 100,000	.017 (.397)
Weeks Worked Before Leaving School n = 2557	−.212 (.0001)	Percentage Poor	.070 (.0004)
Family Income n = 2064	−.205 (.0001)	Avg Minimum Wage[2]	−.160 (.0001)
Welfare Recipiency n = 2602	.094 (.0001)	Avg Hourly Earnings[2]	−.150 (.0001)
Year	−.276 (.0001)	Avg Unemployment[2] Rate	−.049 (.012)

Notes:

[1] Parentheses indicate the probability of observing a correlation greater in absolute value than the one reported, if the true correlation is equal to zero.

[2] Computed over the time to the first job.

Durations longer than 365 were truncated to 365.

education, income and welfare recipiency. Income is divided into three groups which correspond to the lower quartile, upper quartile and the middle 50 percent of our sample. Father's education is divided into less than high school, high school, and more than high school education.

Table 3 indicates that a one percent increase in the minimum wage would increase the time to first job by about 3 percent. The only interaction term which is statistically significant is the interaction between the minimum wage and fathers with college education. Given that the welfare recipiency variable is not itself a significant determinant of duration and the problems with the income data, we believe that the interactions with father's education provide the most compelling test of our hypothesis.

TABLE 3
Effect of Minimum Wage on Log (Time to First Job)

Independent Variables	(1)	(2)	(3)
Minimum Wage	.976 (.350)	1.02 (.349)	1.25 (.374)
Minimum Wage° Father no High School	.064 (.049)	—	—
Minimum Wage° Father College	.105 (.051)	—	—
Minimum Wage° Welfare Recipiency	—	—	−.506 (.382)
Minimum Wage° High Income	—	.042 (.064)	—
Minimum Wage° Medium Income	—	.074 (.050)	—
National Unemployment Rate	.334 (.078)	.331 (.078)	.335 (.078)
State Average Hourly Earnings	.062 (.049)	.056 (.050)	.055 (.049)
Year	−.581 (.082)	−.586 (.082)	−.507 (.084)
Father Top Grade	−.045 (.023)	−.041 (.014)	−.040 (.014)
Welfare Recipiency	.114 (.143)	.174 (.149)	1.66 (1.27)
Weeks Worked Before Left School	−.016 (.0016)	−.017 (.0016)	−.017 (.0016)
Non-Respondent Family Income°	−.018 (.0045)	−.017 (.0060)	−.017 (.0044)
Number Observations	1803	1803	1803
R square	.161	.159	.159

Notes: Standard errors in parentheses. Variables not shown include an intercept, black, Hispanic, percent black (in county), percent Hispanic, per capita income, crimes per 100,000, median age, population, percent urban, native born and percent poor.

° Coefficient and Standard Errors multiplied by 1000.

The coefficient estimates indicate that youths with college educated fathers experience an increase in time to first job when the minimum wage increases, to a larger extent than do youths with less educated fathers. This result supports the hypothesis that people from backgrounds of higher socio-economic status are more likely to withdraw from the labor force in response to an increase in the minimum, other characteristics being equal.

However, this supply-side effect is small, relative to the effect of other personal characteristics. The coefficient on the interaction term indicates that the elasticity of the duration of nonemployment with respect to the minimum wage is about a third of a percentage point higher for people with college educated fathers than for those without. At the mean, this elasticity goes from about 3 to about 3.3.

A surprising result is that the time trend is significantly negative. Starting in 1979, the mean duration appears to have decreased about 44 percent per year. This is a result which appears in the raw data and for which we have no explanation at this point. The estimated effects of other personal and community characteristics can be seen in the table.

Several other specifications, not reported in the tables, test the robustness of these results. In one, we include a dummy variable for each state in order to control for factors such as differing compulsory schooling laws and differences in the coverage of state minimum wages. These results are quite similar to the ones in Table 3 except that the coefficient on the minimum wage variable becomes insignificant. However, the coefficient on the interaction term with college educated father remains significant and is very close to that reported above.

Truncating durations longer than 365 days to be equal to 365 days does not notably affect the estimates. On the other hand, the treatment of the time trend has a dramatic effect on the estimated coefficient on the minimum wage. Using a monthly rather than an annual trend variable, the estimates imply that a 1 percent increase (at the mean) in the minimum wage would increase durations by 36 percent. This estimate seems very high. On the other hand, a specification which omits the time trend entirely implies that a one percent increase would result in a 1.8 percent decrease in durations.

The interactions with college educated father in either of these specifications are no longer significant at the 95 percent level of confidence, although they are significant at the 90 percent level. Again, the coefficients are quite similar to those reported above.

The unstable effects of the time trend remain a puzzle. At this point in our research we can only suggest that the estimates obtained by including the yearly time trend are more reasonable, in the sense that they are consistent with previous estimates of minimum wage effects.

If we stratify the sample according to whether or not the person ever went to college, there is no longer any effect of the interaction terms. From this, we hypothesize that the interaction terms in the regressions reported above capture the effect of the minimum wage on the timing of college attendance, and that it is primarily youths from families with college educated fathers that attend college. The main effect of the minimum wage is significant only for the subsample who do not go to college.

Finally, we estimated the equations separately for blacks and whites. The small sample size for blacks (514 observations) makes any conclusions tentative, but the minimum wage has a very large effect on the durations of blacks—a one percent increase is associated with a 30 percent increase in durations. The interaction terms with father's education are not statistically significant, but the effects of the national unemployment rate and of the time trend are greater than they were for the sample as a whole.

Conclusions

While the research presented here is preliminary, there are several interesting results. Our results are consistent with those of previous studies which find that increases in the minimum wage are associated with decreases in youth employment. We find that a 1 percent increase in the minimum wage would increase the time to a first job after leaving school by about 2 percent.

We also find that having a college educated father increases the effect of the minimum wage on the duration of this first nonemployment spell. This result suggests that youths from families of higher socio-economic status are more likely to withdraw from the labor market in response to higher search costs associated with increases in the minimum wage. This finding disappears when we stratify by whether or not people went to college, which leads us to believe that youths with college educated fathers respond to higher minimum wages by withdrawing from the labor force in order to attend college.

Our results for blacks are quite different—increases in the minimum wage have a much greater effect on durations of blacks than of whites, and having a college educated father does not change the effect of the minimum wage on the time to first job.

Acknowledgments

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Fortune and Misfortune: Union Growth in Canada and the United States

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This paper reports on union growth patterns in North America during the past thirty years. Based on a larger study (Chaison and Rose, forthcoming), it considers the effect of market forces, public policy, employer resistance, union organizing activity and public opinion on union membership trends. The results indicate that the decline of U.S. unionism and the expansion of Canadian unionism is explained by the complex interplay between public policy, employer resistance and union organizing activity.

Trends in Unionization

In 1956, unions represented approximately one third of the non-agricultural workforce in the United States and Canada. By 1988, U.S. union membership had increased by a scant 4 percent and union density had fallen below 17 percent. It is noteworthy that U.S. unions have lost more than 5 million members since 1976 (Bain and Price, 1980; Troy and Sheflin, 1985; U.S. Department of Labour, 1989). In contrast, Canadian union membership rose by more than 180 percent and union density climbed to 36.6 percent between 1956 and 1988. Nevertheless, union growth has slowed in recent years and union density has fallen from its peak of 40 percent in 1983 (Labour Canada, 1988).

The divergence in union growth is exhibited in both the public and private sector. Whereas, the public sector has been the principal source of membership expansion in both countries, the public sector

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density rate in Canada is approximately 65 percent or nearly twice that of the United States. In the private sector, union density rates have fallen in both countries. However, the private sector density rate is not only higher in Canada, but the differential widened between 1975 and 1985. In Canada, union density in manufacturing was relatively stable from 1976 to 1986 (dropping from 43.5 percent to 41.6 percent) compared to the precipitous decline (from 41.6 percent to 24.0 percent) in the United States (Meltz, 1989).

Market Shifts

Numerous studies have examined the effect of changes in the industrial and occupational composition of employment on union decline. It has been argued that as employment shifts from the traditional union strongholds to less unionized sectors (e.g., from manufacturing to the service industry), unions will have greater difficulty maintaining union density rates (e.g. Troy, 1986). The evidence shows that structural shifts do not adequately explain the decline in union density in the United States (Farber, 1987), or the divergence in union density rates among industrialized countries in general (Lipset, 1986; Freeman, 1989) or between the United States and Canada in particular. Indeed, if Canada had the same distribution of employment as the United States, its union density rate would have been approximately 10 percent higher (Chaison and Rose, forthcoming).

A case could be made that labor markets in the United States and Canada are different. For example, it has been argued that the differential in private sector density rates reflects a heavily unionized and government subsidized service sector in Canada (e.g., health care and education). In contrast, the United States has a more fully developed private service sector (Troy, forthcoming). Taking into consideration these factors and employment expansion in the less unionized private service sector, it appears that Canadian private sector density is lower than previously estimated and there is less potential for union growth (Meltz, 1989). However, analyses based on structural shifts are still unable to explain the sharp drop in union density in the United States private sector, particularly in manufacturing; the significantly higher density rates in Canada in all industries; or the greater ability of Canadian unions to recruit new members among service workers and white-collar workers (Betcherman, 1989; Meltz, 1989; Chaison and Rose, forthcoming; Rose and Chaison, forthcoming).

Public Policy

An important factor that accounts for the difference in union density rates in the United States and Canada is public policy. The legal framework in Canada is more supportive of union organizing. Although the Canadian system is derived from the Wagner Act model, the certification of new bargaining units normally is based on signed membership cards rather than elections. In those Canadian jurisdictions where certification votes are mandatory, expedited elections are the norm. In either case, Canadian certification procedures differ from the U.S. approach in that they allow employees to make a free choice for or against union representation without protracted employer campaigns.

An examination of certification outcomes in the two countries reveals substantial differences in union performance. A survey of 30,000 certification applications in Canada between 1971 and 1985 revealed that nearly 70 percent of the *applications* were granted. In the United States, the union success rate in certification votes declined from 65.3 percent to 46.5 percent between 1955 and 1985 (Seeber and Cooke, 1985; Chaison and Rose, forthcoming). American unions have not won a majority of certification elections since 1974. This trend in certification outcomes has been associated with a rise in employer delaying tactics and employer discrimination against union supporters.

There are other aspects of public policy in Canada that are more supportive of union organizing and collective bargaining. For one thing, Canadian labor boards have greater remedial authority to discourage employer misconduct during organizing drives. For example, under certain circumstances, labor boards may grant certification even though the union has failed to achieve majority employee support. They can also issue "make whole" remedies, e.g., compensate unions for legal and organizing costs associated with campaigns frustrated by employer unfair labor practices. As well, Canadian labor policy provides greater support for achieving first collective agreements. In six jurisdictions covering over 80 percent of the Canadian workforce, labor boards may impose first collective agreements when employers refuse to recognize or bargain in good faith with newly certified unions (Rose and Chaison, forthcoming). Finally, Canadian labour boards are considerably faster than the NLRB in processing the employer unfair labor practices that arise during organizing campaigns (Bruce, 1989b).

Employer Resistance

Employer resistance has been a potent factor contributing to the decline of U.S. unionism. There is a growing body of evidence that management strategy in the United States has shifted from union-acceptance to union-replacement and union-avoidance (e.g., Capelli and Chalykoff, 1985; Edwards and Podgursky, 1986; and Anderson, 1989). In contrast, union-acceptance continues to be the norm among large unionized firms in Canada (Verma and Thompson, 1989).

Employer resistance in the United States is most evident in the conduct surrounding election campaigns and the negotiation of first collective agreements. An examination of National Labor Relations Board (NLRB) data reveals a dramatic rise in employer unfair labor practices. For example, the number of charges of employer discrimination against union supporters between 1980 and 1983 was nearly double the 1970 figure and the average annual number of reinstatement cases for 1980-1983 was nearly three times the level in 1970 (Cooke, 1985). In contrast, there has not been a sharp rise in employer unfair labor practices in Canada. Indeed, the incidence of employer misconduct in Canada is quite modest in comparison to the American pattern. For example, one study found the number of discriminatory discharge complaints per representation campaign was 25 times greater in the United States than in British Columbia and 6 times greater than in Ontario (Weiler, 1983). According to Freeman (1985), employer resistance in the United States accounts for 25 to 50 percent of the decline of union success rates in certification elections.

Whereas Canadian employers share many of the same values as their American counterparts, union-avoidance has not been widely embraced. Adams' (1981) theoretical framework suggests that the difference in employer behavior can be explained by the goals and strategies of organized labor and government. In Canada, the presence of a strong and increasingly nationalistic labor movement which supports the policies of the social democratic New Democratic Party and the acceptance of government intervention in the market place have profoundly influenced the industrial relations system. What appears to be a broader acceptance of unions in Canada has been influenced by a labor policy which encourages collective bargaining and makes it more difficult for employers to vigorously oppose union certification. Additionally, geographic constraints, notably the absence of low-wage, low-unionization regions comparable to the American South, may have reduced the need for union-replacement strategies among Canadian employers (Verma and Thompson, 1989). It appears that American and Canadian employers have reacted differently to economic pressures. In Canada, the emphasis appears to be on "more cooperation by labor, management and government in search of consensus and the expansion of workers' participation by right," whereas many U.S. employers "have abandoned their commitment to unions and collective bargaining" and "rather than being embraced as a social partner, organized labor finds itself to be the object of the most forceful assault on its integrity in more than a half-century" (Adams, 1985, p. 115).

Union Organizing Activity

Union growth depends on organizing new recruits to replace members lost through attrition. Previous research indicates that U.S. unions have a diminished capacity to organize (e.g., Freeman, 1985; Kochan, Katz and McKersie, 1986). Studies reveal there has been a decline in real expenditures on union organizing, the number of single elections petitioned for, and the average unit size and union success rate in certification elections. Additionally, union organizing activity has fallen sharply in those sectors experiencing employment growth, e.g., the service sector and white-collar jobs. A comparative analysis (Chaison and Rose, forthcoming) indicated the level of union organizing activity, the extent of new organizing in the service industry and among white-collar bargaining units, and union success rates were higher in Canada than the United States.

Rose and Chaison (forthcoming) developed new standardized measures of union organizing effectiveness to compare the performance of Canadian and American unions between 1976 and 1985. The level of union organizing activity was measured in terms of (1) the number of certification attempts per 100 union members, and (2) the number of employees attempted per 100 union members (i.e., the potential membership growth through organizing). They found there was a sharp decline in certification activity in the United States. In addition, certification attempts per 100 members were three to four times higher in Canada, while the measure of potential union growth was two to three times higher in Canada. For both measures, the differential in union performance increased in the mid-1980s. United States unions also were less successful in attracting new members. Between 1976 and 1985, there was a large decrease in the number of certifications *granted* per 100 union members, and in net organizing gains as a percentage of union membership and as a percentage of employees attempted. Canadian unions were consistently more successful in each of these measures of organizing success.

These results suggest that differences in labor legislation and employer resistance can affect the level and success of union organizing. Considering the difficulty of recruiting new members in the United States, unions may have found it necessary to devote greater resources to protecting the interests of current members than attracting new recruits. In contrast, Canadian unions can rely on a certification procedure that minimizes employer interference and serves as a reliable method for membership expansion.

Public Opinion and National Values

Lipset (1986) argues the erosion of public support for unions is more important than socio-economic and legal structures in accounting for the 30-year decline in union density in the United States. His analysis of U.S. polling data reveals that (1) the public approval of unions has declined in tandem with union density and the certification success rate and (2) public approval measures are good predictors of union density in any year. In a U.S.-Canadian comparison, he observes that to a major extent, "the effects of structural changes on the strength of the labor movements are mediated by diverse national values" (Lipset, 1986, p. 442).

We do not believe public opinion data assist in explaining union growth patterns in North America. Our review of Canadian opinion polls reveals there has been a long-run decline in public support for unions and that public disapproval in Canada is at least as strong as it is in the United States. However, the decline in public approval has not been associated with lower union density rates. It also is questionable whether polling results unambiguously reflect national values. Polls often reveal different images of unions. For example, while most Americans may have a poor image of organized labor, a strong majority also believe unions play a relevant and needed role (Kochan, Katz and McKersie, 1986).

Unquestionably, there are important differences in national values between the United States and Canada which may affect union density rates (e.g., an electorally viable social democratic party and public enterprise culture in Canada and the free enterprise and competitive individualism of the United States). However, considering the long-run decline in public approval of unions in both countries, it is unlikely that national values have produced such vast differences in the propensity of workers to join unions, the adoption of union-avoidance strategies by management, and the legal framework. An alternative proposition is that governmental structures and political parties, more than national values, explain the divergence in union growth. According to Bruce (1989a, p. 116), "stronger labor laws, rather than more favorable attitudes, have been a more important source of Canada's greater union growth."

Conclusion

This study reveals the divergence in the union growth patterns in North America and suggests that the major determinants of this trend are differences in public policy, employer resistance, and union organizing efforts. There are two immediate implications of the widening gap in the United States-Canada union density rates. First, Canadian sections of international unions may pursue greater autonomy or outright separation from their parent bodies because of resource constraints and different priorities and opportunities for membership expansion. Second, we expect that the Canadian union certification procedure and higher density rates will become prime evidence in the case for labor law reform in the United States.

We believe that the patterns of union growth in North America and their possible determinants are symptomatic of the broader changes in the two industrial relations systems. Although a full discussion is beyond the scope of this brief paper, we note once again that United States' employers seem to have backed down from their commitment to collective bargaining. The widespread erosion of the so-called labor accord (i.e., the set of institutional, economic, political and legal relationships that form the implicit "rules of the game" in industrial relations) is apparent not only in intensified employer resistance to unionization, but is abetted by a weak legal framework. It also shows itself in the frequently proactive negotiating stance of employers that evolved from earlier rounds of concession bargaining, their greater willingness to temporarily or permanently replace strikers, their use of sophisticated union substitution strategies, often based on employee involvement programs, and their transfer or subcontracting of work from unionized to nonunion domestic and foreign facilities. In Canada the labor accord still stands; while one could always find a few severely strained relationships, there are no major or widespread shifts in employer conduct on the bargaining or organizing fronts (Edwards and Podgursky, 1986; Adams, 1989).

It is ironic but certainly not surprising that as the United States and Canadian labor movements and industrial relations systems move further apart, they have become the subject of a new wave of comparative studies. There seems to be a growing recognition that the best perspective on the future directions of industrial relations in the United States and Canada can be gained by examining developments in the two countries simultaneously, with each serving as a benchmark for what could have been or what should have been.

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Structural Explanations for the Divergence of Canadian and U.S. Unemployment Rates

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From the early 1950s until the mid-1970s, unemployment rates in Canada and the United States moved in tandem within a narrow margin, and on average were virtually identical—5.1 percent in Canada and 5.3 percent in the U.S. from 1954 to 1976. The similarity ended in the mid-1970s when unemployment rates in the two countries diverged substantially; from 1977 to 1988 the average unemployment rate in Canada was 9.1 percent, two percentage points higher than in the U.S. These developments in unemployment rates contrast with the real growth experiences of the two countries which, if anything, became more similar after the mid-1970s (Chart 1).

The question of why unemployment rates in Canada and the U.S. have diverged was addressed in a well-known article by Orley Ashenfelter and David Card (1986). After concluding that movements in aggregate demand had not been a major source of the unemployment gap, Ashenfelter and Card analyzed comparative developments in real wages and a variety of structural aspects of the two labor markets. They arrived at the following negative conclusion: "We have been singularly unsuccessful in documenting structural differences in the U.S. and Canadian labor markets that can explain the recent divergence in unemployment rates between the two countries."

This paper, which draws together results from closely related studies for Canada (Coe, 1990) and the United States (Adams and Coe, 1990), arrives at a different conclusion, namely that the divergence in actual unemployment rates reflects a divergence in the natural rates of unemployment in the two countries. The next section reports estimates of the natural rates of unemployment that are determined by structural features of the two labor markets: the demographic composition of the labor force, unemployment insur-

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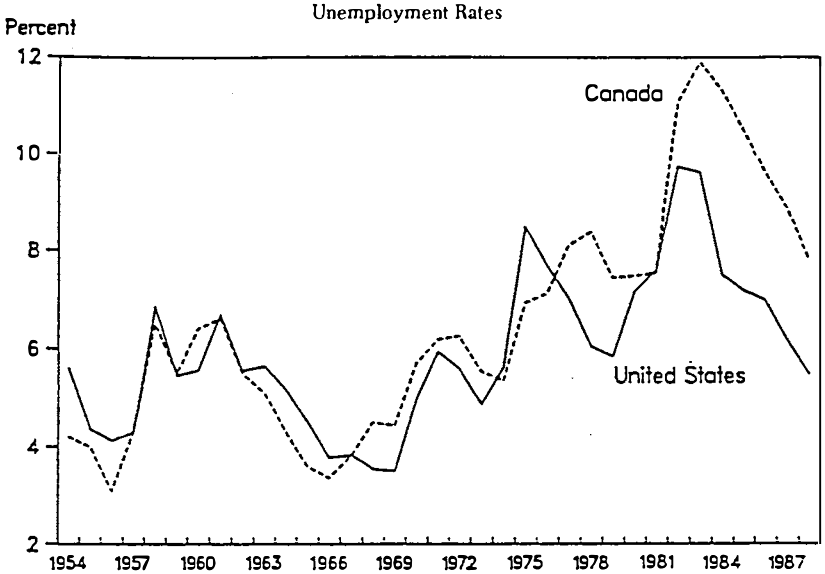
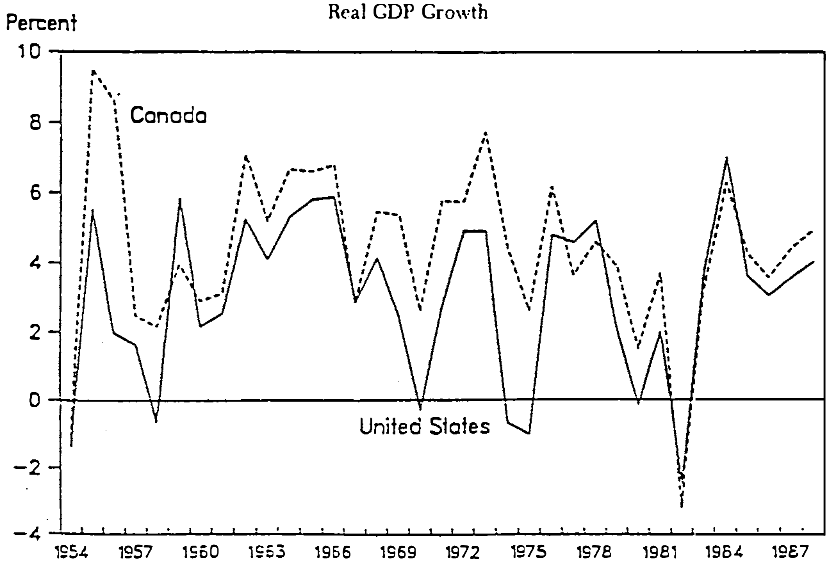
CHART 1

Unemployment Rates and Real Growth in Canada and the U.S.

Unemployment Rates



Real GDP Growth



ance replacement ratios, minimum wages, the degree of unionization—all of which are discussed by Ashenfelter and Card—and employers' payroll taxes. As discussed in the final section, the relative movements in these structural variables, and the different responsiveness of unemployment in the two economies to changes in them, explain why the natural rate in Canada, which was broadly the same as in the U.S. in the early 1970s, may now be two percentage points higher.

Estimates of the Natural Rate of Unemployment in Canada and the U.S.

The estimates of the natural rate presented here are based on estimated unemployment rate equations.[1] The objective was to separate cyclical unemployment from structural unemployment, and identify the natural rate as that component of unemployment determined by structural variables. Given the hiring and firing practices of firms, few constraints were placed on the dynamic response of the unemployment rate to its determinants. The estimated equations, which do a good job of tracking quarterly developments in the unemployment rate in the two countries, are reported in Coe (1990) and Adams and Coe (1990).

The expressions for the natural rate of unemployment have been derived from short-run, dynamic unemployment rate equations by solving for the long-run, steady-state relationships between the unemployment rate and its structural determinants. This long-run focus seems appropriate for an equation describing one of the key structural features of the economy. The expression for the natural rate of unemployment for Canada is,

$$U^{NAT} = 0.007UIRR + 0.034RMW + 0.627NWLC + 0.289UNN + \text{constant}$$

and for the United States,

$$U^{NAT} = 0.053UIRR + 0.040RMW + 0.302NWLC + 0.017UNN + DEM - 3.514$$

where UIRR is the unemployment insurance replacement rate adjusted for coverage; RMW is relative minimum wages; NWLC is non-wage labor costs (employers' contributions for social and private insurance and pension plans as a percent of wages and salaries); UNN is a measure of union density; and DEM is the impact of the changing composition of the labor force in the United States. The definitions of some variables differ for the two countries.[2] All variables are expressed as percents.

The expressions for the natural rates of unemployment include a constant that reflects, *inter-alia*, the inflation-neutral level of the cyclical and supply-shock variables. For Canada, alternative assumptions were made to calculate an upper and lower bound for the natural rate of unemployment. For the United States, wage and unemployment rate equations were jointly estimated thereby exploiting information on wage developments to estimate the constant in the expression for the natural rate.[3]

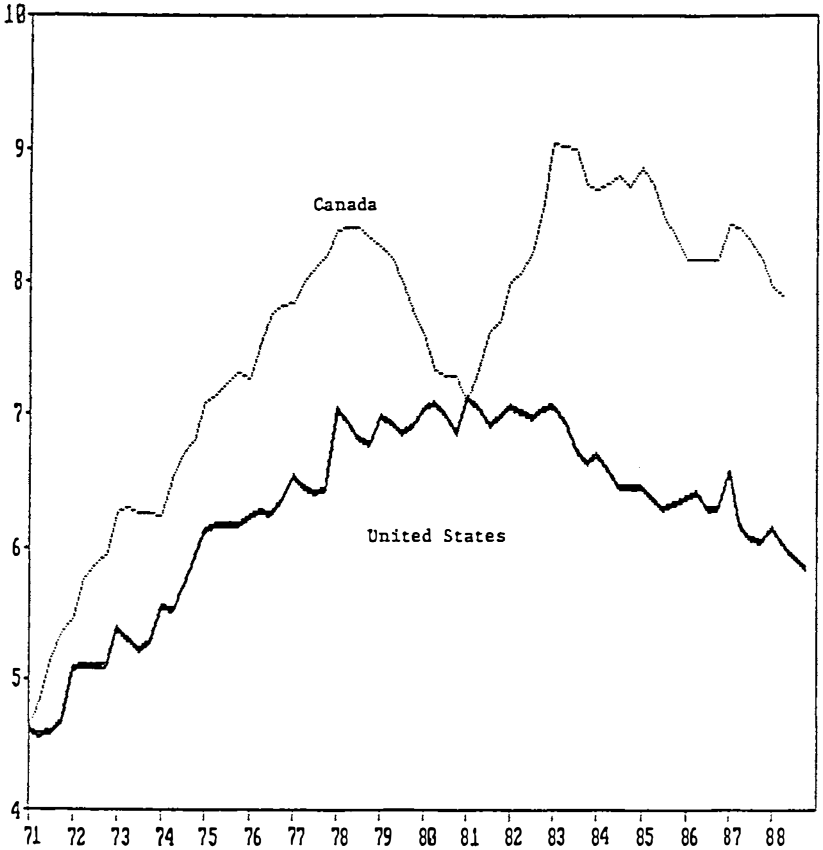
Although there are numerous theoretical and empirical studies pointing to the importance of most of these structural factors in determining the natural rate of unemployment in Canada and the U.S., there is no consensus on the orders of magnitude of specific parameter estimates. This is particularly true of the impact on unemployment of changes in unemployment insurance benefits.[4] An exception might be the impact on U.S. unemployment of changes in minimum wages; the estimated coefficient reported above is consistent with results reported in the literature.[5]

Non-wage labor costs, which involve administrative costs and increase the share of employment costs which is fixed, are often emphasized in discussions of European unemployment developments (Bean *et al.*, 1986) and as a determinant of the NAIRU in studies for North America (Gordon, 1982). Increases in non-wage labor costs may tend to increase the equilibrium level of unemployment by increasing the rigidity of compensation with respect to labor market conditions, inflation and productivity, and/or by lowering profits and profit expectations. Moreover, higher non-wage labor costs, many of which involve some aspect of deferred compensation, tend to favor skilled over unskilled labor and to increase the bond between employers and employees and hence discourage the hiring of employees likely to remain with the firm for only a short period of time. This may make employers search longer before hiring, increasing the duration of vacancies and hence the natural rate of unemployment (Hall, 1979). This view of unemployment as a hiring problem has been emphasized recently by Flanagan (1988) as a possible explanation of high European unemployment.

Using the above expressions, the natural rate of unemployment in 1971Q1 is estimated to be 4.6 percent for the United States and between 4.1 and 5.1 percent for Canada, depending upon the assumptions made with regard to the cyclically neutral level of the output gap and the shock-free levels of the supply variables. For the purposes of this note, it is convenient to adopt the mid point of the two estimates for Canada making the natural rates of unemployment in the two countries identical in 1971.

The estimated natural rates for Canada and the United States are shown in Chart 2. By 1988 the natural rate in the United States is estimated to be about 6 percent whereas in Canada it is estimated to

CHART 2
Estimated Natural Rates of Unemployment
percent



be about 8 percent; both estimates are broadly consistent with others found in the literature.[6] As noted above, this 2 percentage point gap is also apparent in actual rates of unemployment. Thus the divergence in unemployment rates in the two countries reflects a divergence in the natural rates of unemployment—a divergence apparent already in the early 1970s—rather than different cyclical developments.

Structural Explanations for the Divergence of Canadian and U.S. Unemployment Rates

The time profiles of the estimated natural rates of unemployment are a reflection of the combined influences of the structural variables. Bearing in mind that the variables are not always consistently measured or defined across countries, the most important differences between 1971 and 1988 were: unemployment insurance replacement rates and other aspects of the generosity of the unemployment insurance system increased much more in Canada than in the U.S.;[7] union density increased somewhat in Canada but declined substantially in the United States; and non-wage labor costs, after increasing by similar magnitudes in both countries from 1971 to the early 1980s, remained broadly constant in Canada while declining somewhat in the U.S.

There have also been changes in the age/sex composition of the labor force in both countries. An indication of the impact of these demographic changes can be obtained by comparing the actual unemployment rate to one based on a constant age/sex composition of the labor force.[8] For both countries such calculations suggest that the changing age/sex composition of the labor force may have increased the natural rate by about 0.4 percentage points between 1971 and the mid-1970s, although this impact on unemployment rates was reversed by the mid-1980s.

Focusing on changes between 1971 and 1988, the contributions of each of the structural variables to changes in the natural rate of unemployment are as follows (in percentage points):

	Canada	U.S.	difference
change in the natural rate	3.3	1.3	2.0
due to changes in:			
UI replacement ratios	0.6	0.2	0.4
relative minimum wages	−0.9	−0.3	−0.6
non-wage labor costs	2.6	1.9	0.7
degree of unionization	1.0	−0.2	1.2
age/sex composition of the labor force	−0.1	−0.3	0.2
change in actual unemployment rate	2.9	0.7	2.2

Given that the levels of the estimated natural rates of unemployment are consistent with other estimates, how does one judge the "reasonableness" of these estimated impacts on the natural rates of unemployment? The calculations of the impact from the changing age/sex composition of the labor force are straightforward, although there may be additional demographic effects on the natural rate not captured by these calculations. As noted, the estimated semi-elasticity of the unemployment rate with respect to relative minimum wages for the U.S. is similar to estimates found in the literature. The impact on the Canadian unemployment rate from the 1971 changes in the adjusted unemployment insurance replacement rate is estimated to be about 0.65 percentage points, which is similar to Grubel, Maki and Sax's (1975, p. 187) estimate of 0.8 percentage points.[9] The magnitude of the different impacts from developments in union density do not appear inconsistent with the different strategies of unions in the two countries in the 1980s as reflected in the wave of concession bargaining by U.S. unions and the absence of any concession bargaining by Canadian unions.

Although the impact of relative developments in non-wage labor costs on relative movements in the estimated natural rates is not out of line with the impacts from the other structural variables, the magnitude of changes in non-wage labor costs from 1971 to 1988 on the estimated level of the natural rate in each country is large. This partly reflects the fact that increases in non-wage labor costs have been large, and, in the U.S., only partially reversed, as well as the large elasticities estimated for both countries.

In summary, the divergence in Canadian and U.S. unemployment rates after the mid-1970s is a reflection of a divergence in the natural rates of unemployment in the two countries, rather than different cyclical positions. Moreover, the larger increase in structural unemployment in Canada compared to the U.S. is related to the relatively larger impact from developments in union density, unemployment insurance replacement rates, and non-wage labor costs. This is offset somewhat by a smaller impact on structural unemployment from declines in relative minimum wages in the U.S. than in Canada. Changes in the age/sex composition of the labor force from 1971 to 1988 have tended to lower structural unemployment somewhat more in the United States than in Canada.

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those of the International Monetary Fund. The author is in the Current Studies Division of the Research Department; this paper draws on work completed in the North American Division of the Western Hemisphere Department.

Endnotes

[1] This approach has been used by Barro (1977); alternative approaches to estimating the natural rate of unemployment are discussed in Adams and Coe (1990).

[2] The Canadian unemployment insurance replacement rate includes an adjustment for changes in the minimum qualifying work requirements and maximum benefit periods, including extended regional benefits. For the U.S., minimum wages and unemployment insurance benefits are both expressed relative to wages of employees of private households, whereas for Canada they are relative to average wages in the commercial sector. Relative minimum wages for the U.S. arc multiplied by the percent of the labor force age 16-24. Union density is measured as union members as a percent of the labor force in Canada and as a percent of employment in the United States.

[3] The full system also includes price and multifactor productivity equations and is used simultaneously and consistently to estimate the natural rate of unemployment and potential output. See Adams and Coe (1990).

[4] Grubel and Maki (1976), for example, based on an analysis of time-series data for the U.S. report an elasticity of the unemployment rate with respect to the unemployment insurance replacement ratio of 6.0; based on cross-section data for the 50 states, they report an elasticity of 0.9; the parameter reported above for the U.S. implies an elasticity of about 0.6. See also Grubel (1988) and Rose (1988).

[5] The estimated parameter reported above for the U.S. implies that a 10 percent increase in the minimum wage would increase the natural rate by about 0.04 percentage points (the 10 percent change in the minimum wage results in a change equal to 1.0 in the RMW variable, which for the U.S. is the relative minimum wage multiplied by the share the labor force aged 16-24). If the impact fell fully on teenagers, this would translate into an increase in the teenage unemployment rate of about 0.62 percentage points. As summarized by Brown (1988, p. 139), recent studies which control for the teenage population share estimate the impact to be 0.75 percentage points.

[6] For a summary of recent Canadian estimates, see Rose (1988); for recent U.S. estimates, see Iden (1989).

[7] There were important changes to the Canadian unemployment insurance system in 1971 and 1977 which had the effect of making the generosity of the unemployment insurance system dependent on past levels of the unemployment rate. These changes are discussed, and estimates of their impact on the length of work requirements and benefit periods are presented, in Coe (1990); see also Milbourne, Purvis, and Scoones (1989).

[8] The variable DEM in the U.S. unemployment rate equations reported above is calculated in this way. A comparable variable was not included in the Canadian equation reported above but is included in the decomposition presented below.

[9] Grubel (1988) and Moorthy (1990) attribute most of the divergence between Candian and U.S. unemployment rates to the increased generosity of the Canadian unemployment insurance system.

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An Empirical Analysis of Youth Joblessness Durations

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This paper analyzes the determinants of youth joblessness durations. Several recent papers (for example, see Ellwood [1982], Flinn and Heckman [1983], Heckman and Borjas [1980], Lynch [1989], and Stephenson [1982]) have addressed this topic. Most of these studies (Lynch [1989] is an exception) have used data from the National Longitudinal Survey (NLS) Young Men's Cohort or the NLS Young Women's Cohort. Typically, sample sizes were small. The data used in this analysis were derived from the new National Longitudinal Survey of Youth.[1] These data are more detailed than the old NLS surveys and yield much larger sample sizes.

Much of the discussion of youth joblessness (see Ellwood [1982], Heckman and Borjas [1980], and Stephenson [1982]) has centered around the issue of state dependence. Does the length of previous spells of employment and joblessness in part determine the length of the current spell of joblessness (employment)? The major difficulty encountered when addressing this issue is separating true state dependence from unobserved heterogeneity (see Heckman and Borjas [1980] for a complete discussion of these issues).

The main purpose of this paper is to present new evidence on the topic of state dependence.[2] Individuals are tracked out of school, into the labor market, and through their first job. The determinants of the length of an individual's joblessness duration after leaving their first job is the subject of analysis. Estimates are derived from a log-normal duration model. Predicted tenure instead of actual tenure is used in the estimations to eliminate bias due to unobserved heterogeneity. There is weak evidence of state dependence for women. Specifically, for women, increased job experience decreases the duration of joblessness.

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The Data

The data used in this paper were derived from the National Longitudinal Survey of Youth (NLSY). The NLSY is a panel study that tracks 12,686 youths that were aged 14-22 in 1979. Joblessness durations were actually constructed from the NLSY Work History Tape with additional variables being added from the cohort tapes as needed. At the time of this research seven years of data were available.

The sample used in this research was constructed as follows: Those individuals still enrolled in school at the start of the survey were tracked until they left school.[3] Individuals who either left school before the start of the survey or never left school were omitted from the sample (5,431) as were individuals in the military (1,339). Individuals who held multiple jobs were also deleted (554).

There is some discretion in defining the first job worked after leaving school for individuals who were actually working when they left school. In this paper, individuals who were working full-time jobs when they left school and who started these jobs before the previous year's survey were deleted (960). Otherwise, that job was designated as their first job. For individuals working part-time jobs when they left school, their next job was designated their first job. There was only a small number of individuals (104) who left school but never found a job. Finally, in order to make use of data on spouse income, individuals whose first job started before 1979 were omitted (325).

Missing values cut the final sample size to 1,941. Table 1 summarizes the data. Variable definitions are contained in Table 2. Average tenure in the first job was 86.8 weeks (median = 49.6) for women and 103.4 weeks (median = 65.3weeks) for men.[4] The spell of joblessness that is the subject of analysis of this paper is the spell that is incurred after leaving the first job.[5] Individuals who left their first job for pregnancy reasons or because a program ended were excluded (176) as were those who had a job lined up before leaving (251).[6] Finally, there were 478 individuals who had not left their first job by the end of the survey period. The average joblessness spell was 56.0 weeks (median = 25.31 weeks) for women and 34.3 weeks (median = 16.5 weeks) for men.[7]

Methodology

To estimate the effect of previous job experience on the duration of joblessness, a log-normal model which adjusts for right censoring (see Kalbfleish and Prentice [1980], pgs. 54-55) is estimated.[8] Let $\ln(T_i)$ be the natural log of tenure in the first job for the ith individual, $i = 1$,

TABLE 1

Summary Statistics

Sample Size	1941
Average Hourly Wage First Job (79$)	3.61
Average Hours Worked Weekly First Job	36.3
Average Weeks Tenure First Job: Men	103.4
Average Weeks Tenure First Job: Women	86.8
Percent Unionized	13.9
Percent Government Jobs	7.1
Percent Women	55.4
Percent Black	28.3
Percent Hispanic	15.4
Percent Married	15.9
Percent with Children	12.8
Average Years Schooling	12.7
Average Age	19.9
Number Joblessness Spells	1003
Percent Laid Off	37.8
Percent Fired	10.9
Percent Quit	51.3
Percent Receiving Unemployment Insurance	9.7
Average Weeks of Joblessness: Men	34.3
Average Weeks of Joblessness: Women	56.0

..., N. Then, it is hypothesized that the natural log of weeks of joblessness, $\ln(J_i)$, for individual i satisfies:

$$\ln(J_i) = z_i'\beta_1 + \delta \ln(T_i) + \epsilon_{1i} \tag{1}$$

where z_i is a k-vector of other exogenous variables which affect the joblessness duration of individual i, β_1 is a k-vector of coefficients and ϵ_{1i} is a normal variate with mean 0 and variance σ_1^2.

Now, it is quite plausible that $\ln(T_i)$ and ϵ_{1i} are correlated so that estimates derived from (1) will be biased. To see this more clearly, suppose $\ln(T_i)$ is determined by

$$\ln(T_i) = x_i'\beta_2 + \epsilon_{2i} \tag{2}$$

where x_i is a j-vector of exogenous variables ($x_i \neq z_i$) which affects the length of tenure of the ith individual's first job, β_2 is a j-vector of coefficients and ϵ_{2i} is a normal variate with mean 0 and variance σ_2^2. Let σ_{12} denote the covariance between ϵ_{1i} and ϵ_{2i}. Only when $\sigma_{12} = 0$ will the estimation of (1) give consistent estimates of δ and β_1. When $\sigma_{12} \neq 0$, consistent estimates can be obtained by substituting the predicted value of $\ln(T_i)$, derived from an estimation of (2), into equation (1).

Results

The coefficient estimates of the log-normal model are given in

TABLE 2
Variable Definitions

LN(T)	- Log of weeks tenure in first job worked after leaving school.
PLN(T)	- Predicted value of log tenure obtained from estimating a log-normal model of weeks tenure in the first job.
UNEMCMP	- Dummy variable which equals one if the respondent was covered by unemployment insurance during their joblessness spell and 0 otherwise.
LAYOFF	- Dummy variable which is 1 if respondent was laid off from first job worked after leaving school and is 0 otherwise.
FIRE	- Dummy variable which is 1 if the respondent was fired from the first job worked after leaving school and is 0 otherwise.
HIGHSCH	- Dummy variable which equals 1 if the respondent completed 12 or more years of schooling and 0 otherwise.
COLLEGE	- Dummy variable which equals 1 if the respondent completed 16 or more years of schooling and 0 otherwise.
AGEGE18	- Dummy variable that equals 1 if the respondent was 18 or over at the time they started their first job.
MARRIED	- Dummy variable which equals 1 if respondent is married and is 0 otherwise.
SPINC	- Income of spouse (79$) in year prior to joblessness duration.
BLACK	- Dummy variable which equals 1 if respondent is black and is 0 otherwise.
HISPANIC	- Dummy variable which equals 1 if respondent is Hispanic and is 0 otherwise.
CHILD	- Dummy variable which equals 1 if the respondent had one or more children at the time of joblessness and is 0 otherwise.
YEARXX	- Dummy variables that equal 1 if the respondent entered joblessness in the year 19XX and is 0 otherwise.

Table 3.[9] Columns (1) and (3) report estimates of equation (1) for females and males, respectively, using the natural log of actual weeks of tenure in the first job. Columns (2) and (4) report estimates of equation (1) for females and males, respectively, using predicted log-tenure where predicted log-tenure was calculated from estimates of equation (2).[10]

Table 3 shows that the estimated effect of previous job experience depends on whether the actual or predicted value is used in estimations of equation (1). When actual tenure is used, increased job tenure significantly reduces the length of joblessness for both women (1%-level of significance) and men (10%-level of significance).[11] However, when predicted tenure is used instead, increased job tenure significantly reduces the duration of joblessness for women only (10%-level of significance). Since the estimates in columns (1) and (3) are biased when $\sigma_{12} \neq 0$, these results suggest that state dependence is a factor only for women.[12]

TABLE 3*
Coefficient Estimates for Log-Normal Model of Joblessness Duration

	Women (n=557)		Men (n=446)	
	(1)	(2)	(3)	(4)
INTERCEPT	2.6543***	2.5966***	2.9902***	2.9696***
	(.3610)	(.4780)	(.3782)	(.5362)
LN(T)	−.2483***	—	−.1138*	—
	(.0633)		(.0632)	
PLN(T)	—	−.1864*	—	−.0843
		(.1073)		(.1149)
UNEMCMP	.0137	−.1498	.3154	.2753
	(.2382)	(.2371)	(.2101)	(.2100)
FIRE	−.0156	−.0169	−.2031	−.2281
	(.2195)	(.2218)	(.2040)	(.2042)
LAYOFF	.1041	.1779	−.1914	−.1923
	(.1435)	(.1438)	(.1395)	(.1432)
HIGHSCH	−.7552***	−.7530***	−.5846***	−.5287***
	(.1855)	(.1953)	(.1552)	(.1741)
COLLEGE	−.4109**	−.3752*	−.0426	−.0100
	(.2038)	(.2114)	(.2419)	(.2572)
AGEGE18	.5420**	.6486**	.2212	.2330
	(.2764)	(.2777)	(.3043)	(.3113)
MARRIED	.2621	.1922	−.7586**	−.7827**
	(.1633)	(.1643)	(.3076)	(.3137)
MARRIED*SPINC	.0160	.0120	.0314	.0327
	(.0230)	(.0230)	(.0990)	(.0990)
BLACK	.5632***	.5714***	.4660***	.4506***
	(.1546)	(.1564)	(.1486)	(.1512)
HISPANIC	.0032	.0279	−.0386	−.0442
	(.1773)	(.1789)	(.1733)	(.1739)
CHILD	.4451***	.4471***	.5751**	.5497**
	(.1654)	(.1689)	(.2555)	(.2566)
YEAR80	.6428**	.5464*	−.2663	−.3019
	(.2798)	(.2818)	(.2468)	(.2469)
YEAR81	1.0408***	.9052***	.2749	.2572
	(.2543)	(.2573)	(.2230)	(.2236)
YEAR82	1.0768***	.9053***	.3496	.3207
	(.2610)	(.2619)	(.2336)	(.2341)
YEAR83	1.0316***	.7791***	.1129	.0781
	(.2676)	(.2662)	(.2312)	(.2311)
YEAR84	1.0118***	.7049**	.1697	.0638
	(.3180)	(.3122)	(.2860)	(.2800)
SCALE	1.4061	1.4212	1.2992	1.3036
	(.0470)	(.0475)	(.0459)	(.0461)

* Standard errors are in parentheses. One, two, and three asterisks indicates significance at the ten, five, and one percent levels, respectively.

One explanation for why this state dependence is observed only for women is that women just out of school may find both market and non-market work to be viable options. However, as a woman's job experience (and human capital) accumulates, the relative attractiveness of non-market work decreases. Thus, jobless women with longer tenures in their previous jobs may search more intensively for new jobs than women with short tenures. For men, non-market work may never be a viable option.[13]

To judge the relative importance of the role job experience plays in influencing the joblessness duration of women, the mean duration of joblessness was calculated for several values of tenure in the first job when other exogenous variables are fixed at their sample means. An increase in tenure in the first job from six months to one year reduces the expected duration of joblessness for an average woman by 7 weeks. Increasing tenure in the first job from one to two years leads to an additional 6-week reduction in joblessness duration.

The significance of the other coefficients was virtually unaffected by the use of predicted log tenure. Individuals with 12 or more years of education have significantly shorter joblessness spells than individuals with less than 12 years of education. However, a college education (16 or more years of education) further reduces the duration of joblessness only for women. Blacks have significantly longer joblessness durations than do whites or hispanics. The mean duration of joblessness for blacks is nearly double that of whites.[14] Individuals with children have significantly longer joblessness durations than individuals without children. Married men have significantly shorter joblessness durations than unmarried men. Whether or not an individual received unemployment insurance compensation during their joblessness spell or whether an individual was laid off, quit, or fired from their previous job does not seem to have any impact on their joblessness duration.[15]

Conclusions

This paper has focused on the determinants of joblessness durations for youths. It was found that black youths experience longer joblessness durations than do white or hispanic youths and that increased education reduces the duration of a jobless spell. After controlling for the possible biasing influence of unobserved heterogeneity, there was some evidence that increased job experience reduces the duration of joblessness for women but not for men.

Given the preliminary nature of the results (especially the latter result), more research is needed before any final conclusions can be drawn. However, assuming these results do persist, it would be helpful to know what causes the differences among groups of youths. Do blacks and women (and in particular women with less job experience) have longer joblessness durations because they are more likely to drop out of the labor market or because they are less likely to get a job offer? What role does discrimination play? Any sound public policy dealing with youth joblessness will have to address these questions.

Acknowledgments

Many thanks to Mike Keane and John DiNardo for comments and Teresa Rothausen for excellent research assistance.

Endnotes

[1] This was also used by Lynch [1989].

[2] All previous studies of state dependence used data from either the NLS Young Men's Cohort or the NLS Young Women's Cohort.

[3] More precisely, individuals were defined as leaving school if they were not enrolled in school at all between two consecutive survey periods.

[4] A log-normal duration model was estimated for men and women separately and expected tenure was computed using the estimated coefficients and sample means.

[5] The NLSY has some data on whether an individual searched for a job part or all of the time during a spell of joblessness. The findings in this paper are unchanged when the sample is restricted to those who actively looked for a job at least part of the time.

[6] Thirty-three individuals had unemployment spells of less than one week but reported that they did not have a job lined up. They too were excluded.

[7] The average joblessness duration was computed in the same fashion as average tenure.

[8] The results of this study were unchanged when a gamma instead of a log-normal specification was used. The gamma specification nests the log-normal and so a test for log-normality was performed. Log-normality could not be rejected at conventional levels.

[9] Table 2 contains the definitions of the other exogenous variables used in the estimations.

[10] Hourly wage and spouse income, along with dichotomous variables for age, race, marital status, children, schooling, union status, government job, full-time job, industry, occupation, and year job was begun were included in the estimation of equation (2).

[11] The validity of the instruments have not been rigorously checked. However, there is some evidence to suggest that the quality of the instruments for males and females do not differ significantly. The adjusted R-square of a regression of log-tenure on the variables described in endnote 10, when censoring is ignored, does not differ much between men (.247) and women (.232). Additionally, the percentage of men and women who are right censored is roughly equal (26.4 percent and 23.2 percent, respectively).

[12] The standard errors reported in columns (2) and (4) are based on the predicted values of log tenure and not the actual values. A first order correction of the standard errors in column (2) increased them less than 1.5 percent. PLN(T) remained significant at the 10 percent level.

[13] All else equal, a man's starting wage at his first job out of school is estimated (using a log-wage regression) to be 14 percent higher than a woman's. Thus, discrimination could be one explanation for why non-market work is a viable option for women but not for men.

[14] The average joblessness spells of black men and women are 53.8 and 84.2 weeks, respectively, whereas the average joblessness spells of white men and women are 29.4 and 47.5 weeks, respectively.

[15] However the coefficient associated with LAYOFF for women and UNEMCMP for men approaches weak significance and suggests that young men receiving unemployment insurance compensation have longer spells than young men who do not receive unemployment compensation and young women who are laid off have longer joblessness spells than young women who quit.

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XXVI. ANNUAL REPORTS

IRRA EXECUTIVE BOARD SPRING MEETING April 5, 1989, Anaheim

The meeting was called to order by President Joyce D. Miller. Present were 1989 President-elect Robert B. McKersie, Board members John F. Burton, Jr., Steven J. Hendrickson, David Lewin, Leon E. Lunden, F. Donal O'Brien, Paula B. Voos, Norman A. Weintraub, and Hoyt N. Wheeler. Also present were IRRA Secretary-Treasurer David R. Zimmerman, IRRA Editor Barbara D. Dennis, Newsletter Editors Charles T. Schmidt, Jr., and Rachel Grenier, and Marion and Larry Leifer of the IRRA National Staff.

Members not present were: Past President Phyllis A. Wallace, and Board members Janice Bellace, Francine D. Blau, Harry R. Gudenberg, Janet L. Norwood, Leslie Nulty, and Ernest J. Savoie.

President Miller opened the meeting explaining that the first portion of the meeting would be devoted primarily to an objective evaluation of the reports of the Working Groups. It was decided to begin with the report of the Winter and Spring Meetings and Programs group. In the absence of both Co-chairpersons, Larry Kahn and Ernest Savoie, copies of a report on the deliberations of a meeting held in February were distributed to the Board members present and briefly studied.

WINTER MEETINGS: The general subject of the make-up of the Program Committee was discussed at some length. Then David Lewin, a member of the Working Group, summarized the report of the group, dated December 8, 1988, which was presented at the annual meeting in New York. A motion by John Burton to adopt Recommendations Nos. 1 through 13 on pages 2, 3, and 4 of the report was not seconded and was restated to permit action on each recommendation separately. A suggestion by David Zimmerman was then moved by John Burton, seconded, and passed to adopt Recommendation No. 2 as described in the supplementary report of the February meeting, but amended to include on the committee, in addition to the IRRA President and President-elect, an editorial and administrative staff member, all with full voting rights.

Subsequently a motion was made, seconded, and passed to adopt Recommendation No. 1.

On Recommendation No. 3, Norman Weintraub moved to adopt the recommendation subject to changing the word "meeting" in the first line to the word "deliberations." The motion was carried.

A motion by Robert McKersie that Recommendation No. 4 be forwarded to the Program Committee for consideration was adopted.

Recommendations Nos. 5, 6, and 7 were approved without change.

A motion by David Lewin was seconded and passed to adopt Recommendation No. 8 after adding the word "annually" between "should" and "compile" and pursuant to the suggestion that the National IRRA office obtain from the National Office of I.R. Councils each July a list of recently graduated Ph.Ds in the I.R., and supply the list to the IRRA President-elect.

Recommendations Nos. 9 and 10 were adopted without dissent.

A motion by Norman Weintraub to adopt Recommendation No. 11 subject to changing the word "encourage" to "require" was seconded and carried.

A motion to approve the general sense of Recommendation No. 12 and to refer it to the Program Committee was made by David Lewin, seconded, and carried.

A motion by John Burton to *not* adopt Recommendation No. 13 was seconded and passed.

SPRING MEETINGS: In place of Recommendation No. 14 it was proposed, seconded, and passed to adopt the following: "The selection of the location of the Spring Meeting will be made by the Executive Board which will consider bids from local chapters as well as especially attractive locations or locations based on other substantive considerations."

Recommendation No. 15, which stated that the Spring Program Committee should be separate from the Winter Meeting Program Committee, was essentially reversed to the following: "There shall be one Program Committee for both Winter and Spring Meetings and that, for purposes of planning the Spring Meeting programs, it will be augmented by four representatives from the local sponsoring Chapter or Chapters." Motion by John Burton, seconded, and carried.

Recommendations Nos. 16 and 17 were adopted without dissent.

A motion by John Burton to adopt Recommendation No. 18, omitting the section on allocation of expense money, was seconded and passed.

There being insufficient time to properly consider the next Working Group recommendations before breaking for the conference reception, it was decided at this time to take up some of the regular Board meeting agenda items.

Minutes of the New York meeting were approved by a motion from Hoyt Wheeler and seconded, subject to changing the dates in the title to 1988, and adding to paragraph 4, "President Wallace expressed the appreciation of the National IRRA to the New York Chapter for hosting the reception."

COMMITTEE ON RESEARCH VOLUME SELECTIONS: John Burton briefly reviewed the history of the committee and its composition and the procedure used for selecting the 1991 Research Volume. This procedure was announced in the May 1988 Newsletter. Only one proposal resulted, which was on the topic "Unionism in America" and coauthored by George Strauss, Daniel Gallagher, and Jack Fiorito. Copies of the proposal were sent to all the committee members who met in December at the Annual meeting, and it was decided to accept the proposed volume, subject to several changes. These changes were accepted by the editors and the committee, by mail ballot, voted to accept the volume as modified. After outlining the contents of the volume which will be titled "State of Unions," and after discussion by Board members, particularly regarding the lack of representation of women and labor people among the list of discussants, John Burton recommended that the volume be approved with the proviso that women and union member commentators be included, and that the length of the discussion sections be limited to less than 10 pages; a motion by Don O'Brien to so approve was seconded and passed.

Following the conference reception the Board met again at 7:30 p.m. and was joined briefly by Jonathan Monat, President of the Orange County Chapter, who reported on the status of the program and meeting arrangements. At the conclusion of his report, President Miller expressed the appreciation of the National IRRA for the efforts of all the local members toward the success of the meeting. The Board then returned to the reports of the Working Groups.

LOCAL CHAPTER RELATIONS: Don O'Brien reviewed the Working Group's report at the December meeting and its recommendations. After much discussion of Recommendation No. 1, a resolution by the Working Group at the February meeting was read. It recommended that paragraph No. 1 of the original Recommendation No. 1 relating to the creation of a Vice President of Chapter Affairs be tabled. Instead, an advisory committee made up of chapter representatives will be selected at the April 7 meeting of chapter representatives in Anaheim. The committee, under the direction of a chairperson, would meet and establish what needs chapters have, how best the National Association and local chapters could work together, and the possibility of a Chapter Vice President. This report would then be presented to the National Board at a later date for discussion on how to implement the recommendations. This disposition of Item #1 was moved by Robert McKersie, seconded, and passed.

In reference to Recommendation No. 2, at the February meeting it had been decided to put the establishment of an Executive Director on hold. Accordingly, a motion by John Burton was adopted which stated that "The Executive Board is fully supportive of the need for increasing support to local chapters, but that the creation of an Executive Director, Associate Director or other changes in office staff be referred for investigation to an Ad Hoc Committee on Implementation."

Recommendations Nos. 3 and 4 were approved without dissent. One copy of the "information kit" referred to in the first paragraph of Recommendation No. 4, was circulated and received favorable comment. Copies were available for distribution to all chapter representatives at the Friday meeting (April 7).

After discussing Recommendation No. 5, a motion by Norman Weintraub was passed to reject the introductory membership idea, and to have the staff study the Institutional Member situation and make recommendations. No action was taken on Items 1 through 5 of the "other activities to strengthen local chapters" except to refer them to the Local Chapter Committee for further consideration.

WORKING GROUP ON RESEARCH PUBLICATIONS: The chairperson of the Working Group, John Burton, explained the "Proposed Organizational Structure for Publications," as recommended by the Group and as described in the report prepared for the April 5, 1989, Executive Board meeting, copies of which had been distributed to the Board members present. The make up and functions of each segment of the structure, as outlined on page 2, Figure A, were discussed. After concluding the discussion of Item Nos. 4 through 9 on page 3, John Burton moved that the organizational structure contained in Section III of the report be endorsed in principal and referred to the Ad Hoc Committee for further development of specifics. The motion was seconded and passed. At this point it was decided to recess until the following evening (April 6) at 7:30 p.m.

When the meeting reconvened at *7:30 p.m. on Thursday, April 6*, the group was joined by Howard Foster of the Northwestern New York (Buffalo) Chapter who reported on the current status of the 1990 Spring Meeting program. In his report he referred to a letter and preliminary program outline, dated March 23, 1989, copies of which had been distributed to the Board members. The meeting hotel is to be the Ramada Rennaisance, located at the airport. In the discussion of the program content the large number of subjects relating to U.S. vs Canada was questioned, and a suggestion made that a session on labor economics might be considered.

EDITOR'S REPORT: Barbara Dennis reported that the 1989 research volume, "The Older Worker," was mailed out in January to all paid members for 1989. The Proceedings of the New York meeting are at the printer and probably will be ready for distribution in late May or early June. The 1990 research volume is in good shape, with eight chapters completed.

COMMITTEE ON RELATIONS WITH OTHER ORGANIZATIONS: David Lewin reported that a proposal to have a joint session with the Academy of Management at its 1989 meeting in Washington has been accepted.

IRRA NEWSLETTER EDITORS: Ted Schmidt and Rachel Grenier reported that the May Newsletter would be ready by the end of April and would contain program listings of all the IR Centers that responded to their inquiries. There will also be a story about the New York IRRA Chapter and the nominations for election to the IRRA Board, as well as the usual content.

President Miller called on David Zimmerman to report on developments for the December meeting in Atlanta. He reported the program to be shaping up well. The hotel problem that resulted when the Hyatt booked another convention seems to be solved. The IRRA meetings will likely be held in the Ritz-Carlton with a few of the larger sessions across the street in the Peachtree Convention Center. [Note: On the basis of space considerations, it was later decided by the ASSA and the IRRA to establish the Peachtree Plaza as the IRRA hotel.] The distinguished speaker has not as yet been selected.

A report on the Ad Hoc Committee established by Past President Phyllis Wallace to consider the relationship between the IRRA and the American Economic Association was made by Paula Voos. She referred to a letter of January 26, 1989, from the Committee, addressed to Joyce Miller, copies of which had been circulated to the Board members. There was some discussion of the suggestions on page 4 that paper proposals be permitted on the basis of abstracts rather than completed papers. A motion by John Burton was seconded and approved to refer the report to the Program Committee with the general sentiment of the Board that decisions on the basis of abstracts are not a good idea.

SECRETARY-TREASURER: David Zimmerman reported that in spite of the dues increase from $36 to $40 that took effect on January 1, 1989, total membership is not expected to decrease. Vigorous promotion, using primarily Chapter membership lists, has resulted in over 700 new members in 1988 which is expected to compensate for those who drop out.

Referring to Balance Sheet and Income Statements, dated December 31, 1988, attached to a letter dated February 23, 1989, from the accounting firm of Stotlar & Stotlar, David Zimmerman called attention to several items. He pointed out that the net loss for the year of approximately $16,000 was due in part to an increase in publications expenses of more than $20,000, mostly in the Research Volume costs, and in the cost of printing and mailing the Proceedings, because of its size. There also was a significant decrease in interest income. He estimated that 1989 would be essentially a break-even year. Discussion of ways to increase income from investments or other sources and to reduce expenses in order to be sure of a favorable income-expense situation for 1989 and for the future resulted in a motion by Robert McKersie for the appointment of a Finance Committee of three to work with the Secretary-Treasurer. The motion was seconded and carried. President Miller later appointed Norman Weintraub, John Burton, and Steven Hendrickson to the Committee, with Mr. Hendrickson as chair.

The 1990 Directory, which was authorized at the December meeting in New York, is already in progress.

The only invitation for the 1991 Spring Meeting was from the Arizona Chapter. A motion by David Lewin to have the meeting in the Phoenix-Scottsdale area, with Tucson as a second choice, was seconded and passed. It was pointed out that President-elect Candidate James Stern had been contacted and approved the choice.

A request for National IRRA affiliation by the Northeast Pennsylvania Chapter, contained in a letter dated March 8, 1989, copies of which had been distributed to the Board, was submitted by David Zimmerman. A motion to approve the affiliation by Don O'Brien was seconded and passed.

NEW BUSINESS: President Miller suggested the following persons to be on the Nominating Committee for 1990 elections: Rudy Oswald (Chairperson), James Chelius, Lois Gray, Randolph Hale, Audrey Freedman, Michael Jedel, and Ray MacDonald. The suggestions were approved.

The Ad Hoc Committee members selected by President Miller and approved by the Board are: Don O'Brien (Chairperson), Janice Bellace, Bonnie Castrey, Norman Weintraub, and Hoyt Wheeler. Ex-officio members are: IRRA President Miller, President-elect McKersie, and Secretary-Treasurer Zimmerman. David Zimmerman was asked to cull through the Minutes and Working Group recommendations as adopted, and to make available a list of issues for the Ad Hoc Committee to consider, particularly of those having a financial impact.

President Miller next referred to a letter from Peter Cappelli in which the subject of a possible session on "Workplace Quality" at the Atlanta meeting was suggested. Reference was made to a pamphlet listing 40 paper topics and abstracts, copies of which were in each Board folder. No action was taken, and it was pointed out that Peter Cappelli is already on a program session for Atlanta, but the general consensus was to refer it to the Program committee.

WORKING GROUP ON RESEARCH PUBLICATIONS: The Board then returned to the consideraton of the report beginning with Section IV, page 4, where the Board had stopped the night before. John Burton briefly explained the reasons for each of the 10 recommendations regarding the annual Research Volume, at the conclusion of which a motion by Paula Voos to adopt Section IV as a whole was seconded and passed.

Section V was adopted with the provision that the list of persons obtaining IR-related Ph.D. degrees be published in the Newsletter instead of the Proceedings.

Section VI was approved, following a motion by Norman Weintraub.

The printing of the Directory every three years as specified in Section VII was approved, subject to financial considerations.

After a thorough explanation of Section VIII, a motion by Robert McKersie was seconded and passed to try it on an experimental basis for two years.

A motion by Norman Weintraub to modify Item 1 of Section IX to have a proposal for compatible desktop publishing prepared by the staff and to approve Items 2 and 3 was seconded and passed.

In Section X, a motion to adopt Item No. 4 was made by David

Lewin and passed. Item No. 5 was referred to the Editorial Committee for further investigation. Item No. 3 was rejected. Items Nos. 1 and 2 were accepted.

There being no further business, the meeting was adjourned.

IRRA EXECUTIVE BOARD ANNUAL MEETING
December 28, 1989, Atlanta

The meeting was called to order at 7:20 p.m. by President Joyce D. Miller. Present were President-elect Robert B. McKersie, and Board members Janice R. Bellace, Francine D. Blau, John F. Burton, Jr., Steven J. Hendrickson, David Lewin, Leon E. Lunden, Janet L. Norwood, F. Donal O'Brien, Ernest J. Savoie, Norman A. Weintraub and Hoyt N. Wheeler. Also present were 1990 President-elect James L. Stern; 1990 Board Members-elect Richard N. Block, Sheldon Friedman, Michele M. Hoyman, Benton F. Kunnecke, and Phillip E. Ray; IRRA Secretary-Treasurer David R. Zimmerman, IRRA Managing Editor Elaine C. Moran, Newsletter Editors Charles R. Schmidt and Rachel Grenier; National Office Staff Marion Leifer, Lynn Case and Larry Leifer. Board members absent were Past President Phyllis Wallace, Harry R. Gudenberg, Leslie E. Nulty and Paula Voos.

Guests at the meeting for the purpose of giving special reports were: Atlanta Chapter President Philip LaPorte; Atlanta General Arrangement Chairman Robert Prescott; Western New York (Buffalo) representatives Howard Foster and Eric Lawson; Tom Kochan, President-elect of the International Industrial Relations Association, reporting on the IIRA 8th World Congress in Brussels; Paul Weinstein, Chairperson of the IRRA Statistical Committee; and Rudy Oswald, Chairperson of the Nominating Committee.

President Miller welcomed all who were in attendance and introduced the retiring members of the Board: Francine Blau, John Burton, Janet Norwood, Ernest Savoie, and Leslie Nulty (who was absent) and called for a round of applause in appreciation for their services. She then introduced the new board members who were there to observe and become acquainted with Board procedure.

A motion by Janet Norwood was seconded and passed to adopt the minutes of the April meeting in Anaheim.

Reports on the progress of planning and arranging for the 1990 Spring meeting in Buffalo were made first by Eric Lawson, then by Howard Foster. The meeting will be held at the Ramada Renaissance

Hotel on May 3 and 4 with a reception and IRRA Board meeting on the evening of May 2.

President Miller then expressed the appreciation of the entire Association to Philip LaPorte and Bob Prescott for their efforts in making the arrangements for the Atlanta meetings. They in turn thanked the IRRA for weathering the problems of last minute changing of hotels with a minimum of stress. David Lewin also commended the ASSA, David Zimmerman, and Bob McKersie for their efforts in making the change and called attention to the inconveniences and confusion caused by the change. He further requested the Minutes to state that, in his opinion, the IRRA could have been subjected to substantial penalty costs, and that had it not been possible to make the change without financial penalty on the Association, he would have opposed it.

Guy Parent, of the Arizona Chapter, then reported on the tentative arrangements for the 1991 Spring Meeting to be held on April 24-26. He reported that twelve hotels were checked out and the one selected as most suitable is the Clarion in Scottsdale. It has excellent meeting room facilities, is centrally located, and the room rates will be $90 single or double.

Tom Kochan then reported on the International Industrial Relations Association 8th World Congress in Brussels. He gave a brief history of the IIRA and its programs. Then he outlined the plans and preparations being made for the 10th World Congress which will be held in the United States, probably in Washington, D.C. in September of 1995. He also indicated the extensive involvement needed from the IRRA in terms of both finances and staff and answered questions about the Congress from board members.

Reporting on the program for the 1990 annual meeting in Washington, D.C., President-elect Robert McKersie indicated the need for more work in setting up sessions, possibly changing the subject of some of the 30 submissions. A suggestion by Hoyt Wheeler that consideration should be given in future programs to include study groups, as is done at IIRA meetings, was discussed and received considerable support.

Paul Weinstein's report on the Statistical Committee referred to a letter from Joyce Miller from COPFAS, copies of which had been supplied to all board members. As a result of his discussion of developments a resolution that "the IRRA endorse the concept of an academic advisory body to meet with the Commissioner of Labor Statistics and other Federal officers on questions of statistics and research" was moved by Hoyt Wheeler, seconded, and adopted. Another motion to approve the payment of $1,103.00 for COPFAS membership dues from 10/01/89 to 9/30/90 was also passed.

Reporting for the Nominating Committee, Chairperson Rudy Oswald announced the unanimous selection of Ernest J. Savoie to be nominated as President-elect for 1991, and to take the office of President in January of 1992. A recommendation by the Nominating Committee to permit the nominations of 2 academic, 1 management, 3 labor and 3 neutral/government members for the next election was presented to the Board. A motion to this effect was made and seconded. After some discussion, a motion by Janet Norwood to table the motion and present the nominations was seconded and passed. Chairperson Oswald subsequently announced the nominees and alternates selected by the Committee. A motion to accept the recommendations of the Committee was made by John Burton, seconded by Janet Norwood, and passed. The slate of candidates will be listed in the May IRRA Newsletter.

David Zimmerman then introduced Elaine Moran who will act as IRRA Managing Editor on a shared-job relationship with the Industrial Relations Research Institute at the University of Wisconsin-Madison.

Reporting on the work of the Research Volume Selection Committee, John Burton briefly sketched the history of the Committee and its functions. The volumes to date are: 1990—"New Developments in Worker Training: A Legacy for the 1990s," edited by Louis Ferman, Michele Hoyman, Joel Cutcher-Gershenfeld, and Ernest Savoie. A report on the status of the volume was distributed to the Board members. 1991—"State of the Unions," edited by George Strauss, Jack Fiorito, and Daniel Gallagher is progressing satisfactorily. 1992—"A Review of Industrial Relations Research in the 1980s"—no proposals have been received for editors to date. The Committee will, in the next few months, find suitable authors and identify topics. It would like to have at least one of the editors be from the group of Ph.Ds that were young academics in the 1980s. A motion by John Burton to approve the topic as outlined was seconded and passed.

Rachel Grenier, reporting for both Newsletter Editors, called attention to the problem of numerous organizations wanting to issue calls for papers that may be in competition with the IRRA calls for papers. She suggested that such requests for space be subject to the advertising policy of the Newsletter which requires that "all advertising be in the interest of the members and to go along with the goals and purposes of the IRRA as judged by the editors" and, if approved, would be charged full advertising rates. A simple notice in a column of notices that there is a call for papers and the name and phone number of a contact person would be provided at no cost. A motion to this effect was made by Hoyt Wheeler, seconded, and passed.

On behalf of the entire Board, President Miller asked that the minutes show the Board's appreciation for the excellent work on the Newsletter by Ted Schmidt and Rachel Grenier.

A report of the results of the meeting of the Chapter Advisory and Ad Hoc Committees was then made by Don O'Brien, Chairperson. Copies of proposals for Board action relating to Research Publications, Program Committees, and Local Chapter Affairs were distributed to members present. In order to acquaint the new Board members with the subject matter at issue, Don O'Brien first gave a brief history of work done by various special working groups during the past three-and-one-half years. He also requested that, because many of the proposals of the working groups were implemented or operational in nature, and because all Board members would receive the full report, the Board limit its discussion to the policy and recommendations of the Ad Hoc Committee.

The first proposal considered was the one on the Program Committee. The motion to adopt was made by Don O'Brien and seconded. An amendment proposed by John Burton to spell out the major areas of interest and major constituencies was seconded and passed. The amended resolution, which was passed by the Board, is as follows: "To create an expanded program committee with representation from the major areas of interest (including but not limited to labor economics/labor markets, union-management relations/collective bargaining, human resource management/organizational behavior, and international/comparative labor); and major constituencies of the IRRA (including but not limited to academicians, employer representatives, labor representatives, neutrals/government agencies, and those involved in local chapter activities); the committee would consist of (a) the following ex-officio members: President, President-elect (Chairperson), Past President, Secretary-Treasurer, Chair of the Editorial Committee, and Chair of the Poster Sessions; (b) at least six (6) additional members; and (c) up to four (4) representatives of the local chapter hosting the Spring Meeting. The additional members (b) would serve three-year staggered terms with the President-elect selecting at least two (2) members to replace retiring members."

The next proposals were in regard to local chapters. The first motion "to amend the Association bylaws to require that all local chapter board members be members of the national association" was amended to add "and all national Board members must be also members of a local chapter when one is geographically available." The amendment by Ernie Savoie was seconded and passed. Then the entire amended proposal was passed. From previous discussion the consensus was that the actual change in bylaws would not take effect until the proposal was ratified at the annual membership meeting in Washington, D.C. In the meantime the chapters would be notified of the action by letter and by an announcement in the Newsletter.

The second proposal "to require local chapters annually to furnish membership information (including names and addresses) to the national association" was moved by Don O'Brien, seconded, and passed.

The third proposal "to create on a two-year experimental basis, the position of Chairperson of the Chapter Advisory Committee, which shall be appointed by the President and President-elect, in consultation with the Chapter Advisory Committee" was explained by Don O'Brien and moved for adoption. It too was seconded and passed. President Miller announced that the first person to be appointed to this position is Don O'Brien.

The proposal regarding Research Publications is as follows: "to create an Editorial Committee consisting of (a) the following ex-officio members: President, President-elect, Secretary-Treasurer and Newsletter Editor, (b) a chairperson who shall also serve as the editor-in-chief of the Association, (c) five (5) additional members, selected by the President for staggered 3-year terms, and (d) the Managing Editor (non-voting). A majority of the members of the Editorial Committee will be members of the IRRA Executive Board. The function of this committee will be to consider, interpret, and propose policy pertaining to all publications of the Association. The motion to adopt the proposal by Don O'Brien was seconded and passed. John Burton was asked and agreed to serve as the chairperson of the Editorial Committee.

A request was made that the minutes record the deep appreciation of all Board members and of the Association for the involvement and participation of John Burton and Don O'Brien in helping to bring these resolutions to fruition.

Don O'Brien then made a motion that the Finance Committee be a standing Committee. This motion was seconded and passed.

David Zimmerman, IRRA Secretary-Treasurer, reported that in spite of declining memberships of similar organizations, the IRRA membership has remained stable and is expected to show a modest increase in 1990 due to the promotional efforts possible with the issuance of a new Directory.

Financially, the Association is expecting a loss in 1989, due primarily to some extraordinary expenses, such as the Review Committee and the additional staff time needed for the special committee work. Increased costs anticipated for 1990, plus the need to restore the surplus or contingency account back to a value of somewhere near 50% of a year's operating costs, make it necessary to increase the regular member dues for 1991 to $45. A motion by Ernie Savoie to increase member dues to $45, and foreign mailing charges to $7, was seconded and passed.

In order to qualify for a fidelity bond it becomes necessary to have two (2) signatures on all IRRA checks. A motion to that effect by Hoyt Wheeler was seconded and passed.

The request for reaffiliation of the Central California Chapter with the National IRRA was seconded and approved.

No action was taken on the item on the agenda regarding the Association for Quality and Participation.

The Board then went into Executive Session to consider staff wages for 1990 and honoraria for the Secretary-Treasurer (David Zimmerman) and Editor (Barbara Dennis) for 1989.

The meeting adjourned at 11:10 p.m.

IRRA GENERAL MEMBERSHIP MEETING

December 29, 1989, Atlanta

President Joyce Miller called the meeting to order at 4:45 p.m., as scheduled.

There were approximately 105 members in attendance. President Miller welcomed everyone to the meeting, then introduced Don O'Brien to give a synopsis report on the work of the Ad Hoc Committee and Chapter Advisory Committee.

Don O'Brien summarized the recommendations made by the committee to the IRRA Executive Board and the action taken by the Board and answered questions from the floor. (These actions will be reported in the Newsletter.)

President Miller then called upon John Burton to report on the work of the Publications Committee. He announced the titles and editors of the 1990 and 1991 volumes, and the subject matter selected for the 1992 volume and asked for volunteers to work on, and make suggestions for, its contents. (This report will be carried in the Newsletter.)

David Zimmerman, IRRA Secretary-Treasurer, expressed the appreciation of the association to the members of the Atlanta Chapter, and particularly Robert Prescott and Philip LaPorte, for their efforts in making this a successful meeting. He then reported on membership and finances. He announced a dues increase approved by the Board to $45 effective in 1991, the formation of a standing Committee on Finance, the nomination of Ernest Savoie as President-elect for 1991, and the re-affiliation of the Central California Chapter, which becomes chapter number 60. David Zimmerman then introduced Elaine Moran, who is dividing her time between the Industrial Relations Research Institute, University of Wisconsin-Madison, and the IRRA as managing editor. Upcoming meeting dates and places were announced as follows: 1990 Spring Meeting, Buffalo, New York, May 2-4 at the Ramada Renaissance Hotel; 1990 Winter Meeting, Washington, D.C., Dec. 28-30 at the Omni Shoreham; 1991 Spring Meeting, April 24-26 in Scottsdale, Arizona, at the Clarion Doubletree; and the 1991/92 Winter Meeting, January 3-5, 1992, in New Orleans. The 1993 Winter Meeting probably will be in either San Francisco, San Diego, or Anaheim, California. The 1992 Spring Meeting location will be determined at Buffalo.

Joyce Miller then relinquished the presidency of the association to Robert McKersie. President McKersie complimented Joyce Miller on her superb leadership during the past year.

He then called for new business.

Several members spoke on the subject of special recognition for particularly good papers presented at the meetings or having a "Best Paper" award. During the discussion, a member requested that those who submit contributed papers be sent a review of comments on the paper. A motion by Mark Kahn to have the Program Committee review the subject and report back by means of the Newsletter was seconded and passed.

The meeting adjourned at 5:45 p.m.

AUDITED FINANCIAL STATEMENTS
December 31, 1989 and 1988

We have audited the balance sheets of the Industrial Relations Research Association, as of December 31, 1989 and 1988, and the related statements of support and revenue and expenses, statements of changes in fund balances, statements of changes in financial position, and supporting schedules for the years then ended. These financial statements are the responsibility of the Association's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Industrial Relations Research Association, as of December 31, 1989 and 1988, and the results of its operations and the changes in its financial position for the years then ended, in conformity with generally accepted accounting principles.

Stotlar & Stotlar, S.C.

March 14, 1990

INDUSTRIAL RELATIONS RESEARCH ASSOCIATION
Madison, Wisconsin

Balance Sheets
December 31,

	1989	*1988*
ASSETS		
Current assets:		
Petty cash	$ 50	$ 50
Cash—checking	20,435	4,594
Cash—money market	53,026	66,481
Other investments	78,106	71,396
Accounts receivable (Less allowance for doubtful accounts of $75 in 1989 and 1988)	8,509	14,297
Prepaid expenses	8,710	17,937
Inventory	8,892	9,906
Total current assets	$177,728	$184,661
Property, plant and equipment:		
Equipment	$ 17,996	$ 14,845
Accumulated depreciation	9,293	6,503
Net property, plant and equipment	8,703	8,342
Total Assets	$186,431	$193,003
LIABILITIES AND FUND BALANCE		
Current liabilities:		
Accounts payable	$ 22,258	$ 17,601
Payroll taxes payable		18
Dues collected in advance	101,266	103,495
Subscriptions collected in advance	13,620	13,036
Total Liabilities	$137,144	$134,150
Restricted fund balance	$ 5,000	$ 5,000
Unrestricted fund balance	44,287	53,853
Total fund balance	49,287	58,853
Total Liabilities and Fund Balance	$186,431	$193,003

(The accompanying notes are an integral part of the statements)

INDUSTRIAL RELATIONS RESEARCH ASSOCIATION
Madison, Wisconsin

Income Statements
For the Years Ended December 31.

	1989	*1988*
Income		
Income from operations		
Membership dues	$155,885	$146,312
Subscriptions	16,892	15,553
Chapter fees	4,857	5,265
Book sales, net of refunds	6,846	7,320
Royalties	1,288	1,864
Newsletter advertising	2,520	2,268
Mailing list rental	7,008	10,730
Meetings	18,860	15,924
ASSA refunds	8,782	8,091
Total operating income	$222,938	$213,327
Expenses		
Compensation		
Salaries	$ 69,447	$ 58,781
Payroll taxes	5,486	4,611
Contract services	2,515	2,320
Officer honorariums	14,500	14,000
Total compensation expense	$ 91,948	$ 79,712
Publications		
Proceedings	$ 34,170	$ 31,953
Spring proceedings	5,148	5,819
Research volume	18,931	30,658
Newsletter	16,927	12,273
Directory	9,023	9,181
Total publication expense	$ 84,199	$ 89,914
Meetings		
General expenses		
Spring		
Meals	$ 6,975	$ 4,762
Travel	1,986	3,148
Miscellaneous	5,419	3,192
Total spring meeting	$ 14,380	$ 11,102
Annual		
Meals	$ 3,029	$ 6,594
Travel	1,561	2,078
Miscellaneous	389	577
Total annual meeting	$ 4,979	$ 9,249
Total general expenses	$ 19,359	$ 20,351
National expenses		
Spring		
General	$ 4,321	$ 852
Hospitality		793
Total spring meeting	$ 4,321	$ 1,645
Annual		
General	$ 1,960	$ 2,577
Hospitality	3,073	4,690
Total annual meeting	$ 5,033	$ 7,267
Total national expenses	$ 9,354	$ 8,912
Total meetings expense	$ 28,713	$ 29,263
Review committee	$ 8,959	$ 7,764
Membership promotions	$ 4,567	$ 7,227
Chapter expenses	$ 638	0
Office and general expenses		
Computer and label costs	$ 1,629	$ 1,140
Office supplies	1,317	3,404
Postage and freight	4,697	7,977
Telephone	948	1,092
Accounting and auditing	2,220	2,140
Bank charges	401	57
Insurance	1,138	885
Depreciation	2,790	2,477
Duplicating	5,034	2,522
Miscellaneous	1,607	2,628
Storage	480	0
Donations	1,000	0
Total office and general expense	$ 23,261	$ 24,322
Total expenses	$242,285	$238,202

Income (loss) from operations	$(19,347)	$(24,875)
Other income and (expense)		
Interest income	$ 9,964	$ 8,997
Loss on securities	0	(98)
Other income and (expense)	$ 9,964	$ 8,899
Net income (loss)	$(9,383)	$(15,976)

(The accompanying notes are an integral part of the statements)

INDUSTRIAL RELATIONS RESEARCH ASSOCIATION
Madison, Wisconsin
Statements of Changes in Fund Balance
For the Years Ended December 31,

	1989	1988
Unrestricted fund balance, beginning balance	$ 53,853	$ 69,829
Unrelated business tax, prior year	(183)	
Net income (loss)	(9,383)	(15,976)
Unrestricted fund balance, ending balance	$ 44,287	$ 53,853

(The accompanying notes are an integral part of the statements)

INDUSTRIAL RELATIONS RESEARCH ASSOCIATION
Madison, Wisconsin

Statements of Changes in Financial Position
For the Years Ended December 31,

	1989	1988
Financial resources provided by:		
Operations:		
Item not affecting cash and short term investments: Depreciation	$ 2,790	$ 2,477
Decrease in inventory	1,014	1,388
Increase in dues paid in advance	0	9,463
Decrease in prepaid expenses	9,227	631
Increase in subscriptions collected in advance	584	980
Increase in accounts payable	4,456	0
Decrease in accounts receivable	5,788	0
Total funds provided	$ 23,859	$14,939
Uses of Funds:		
Net loss	$ 9,383	$ 15,976
Increase in accounts receivable	0	6,888
Purchase of equipment	3,151	1,400
Decrease in accounts payable	0	9,517
Decrease in dues paid in advance	2,229	0
Total uses of funds	$ 14,763	$ 33,781
Increase (Decrease) in cash and short term investments	$ 9,096	$ (18,842)
Cash and short term investments		
Beginning of year	$ 142,521	$161,363
End of year	$ 151,617	$142,521

(The accompanying notes are an integral part of the statements)

INDUSTRIAL RELATIONS RESEARCH ASSOCIATION
Madison, Wisconsin

Notes to Financial Statements

NOTE 1—SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The summary of significant accounting policies of the Industrial Relations Research Association is presented to assist in understanding the Association's financial statements.

Organization

The Association is a not-for-profit organization. Its purpose is to provide publications and services to its members in the professional field of industrial relations.

The Association is exempt from income tax under Section 501(c)(3) of the Internal Revenue Code. However, net income from the sale of membership mailing lists is unrelated business income, and is taxable as such.

Investments

Cash—money market represents the balance invested in money market accounts held at Randall Bank, Madison, Wisconsin, and Valley Bank-Shorewood Hills, Madison, Wisconsin. Interest earned on the Randall account is earning 6%; the Shorewood accounts are earning 5.32%.

Other investments include balances held in the Kemper Government Securities Fund and the Kemper Money Market account. Shares in the Government Securities Fund were traded at 9.10 per share at year end. Funds are stated at lower of cost or market.

Inventory

The Association's inventory of research volumes, proceedings, and prior newsletters is carried at the lower of cost or market value.

Property, Plant and Equipment

Property, plant and equipment are carried at cost. Depreciation is provided using the straight line method over an estimated five to seven year useful life.

Membership Dues—Advance Subscriptions Collected

Membership dues and subscriptions are assessed on a calendar year basis and are recognized on an accrual basis. Funds received for the upcoming 1990 and 1989 calendar years are reflected as deferred income on the balance sheet.

2—RESTRICTED FUND

At the Association's Executive Board Meeting held on April 17, 1985, the Board approved restriction of $6,000 to be applied to expenses of the regional meeting of the International Industrial Relations Association, expected to be held in March, 1988.

The above restriction was lifted in 1986. However, at the General Membership Meeting on December 19, 1986, $5000 was restricted for use for a Comprehensive Review Committee.

ALPHABETIC LIST OF AUTHORS

You are invited to become a member of

THE INDUSTRIAL RELATIONS RESEARCH ASSOCIATION

The Industrial Relations Research Association was founded in 1947 by a group who felt that the growing field of industrial relations required an association in which professionally-minded people from different organizations could meet. It was intended to enable all who were professionally interested in industrial relations to become better acquainted and to keep up to date with the practices and ideas at work in the field. To our knowledge there is no other organization which affords the multi-party exchange of ideas we have experienced over the years—a unique and invaluable forum. The word "Research" in the name reflects the conviction of the founders that the encouragement, reporting, and critical discussion of research is essential if our professional field is to advance.

In our membership of 5,000 you will find representatives of management, unions, government; practitioners in consulting, arbitration, and law; and scholars and teachers representing many disciplines in colleges and universities in the United States and Canada, as well as abroad. Among the disciplines represented in this Association are administrative sciences, anthropology, economics, history, law, political science, psychology, and sociology as well as industrial relations. Membership is open to all who are professionally interested and active in the broad field of industrial relations. Libraries and institutions who are interested in the publications of the Association are also invited to become members, and therefore subscribers to the publications.

Membership dues cover publications for the calendar year, January 1 through December 31, and entitle members to the *Proceedings of the Annual Meeting*, *Proceedings of the Spring Meeting*, a special research volume, a *Membership Directory* every three years, and quarterly issues of the *Newsletter*.

Dues for 1990 calendar year membership are listed below

Canadian and Foreign payments must be made in U.S. dollars by cashier's check or international money order—plus $7.00 to cover postage.

Regular Membership	$ 45.00
Family Membership (at same address, no additional publications)	4.00
Contributing Membership	100.00
Retired Membership (if a member for at least 10 years and not now gainfully employed)	18.00
Student Membership (Full-time)	18.00
Institutional or Library Subscription	45.00

Some members also make additional tax deductible financial contributions to the Association.

If you are not already a member, we invite you to join by sending your membership application and dues payment. Inquiries regarding membership, meetings and publications should be addressed to the IRRA Office.

INDUSTRIAL RELATIONS RESEARCH ASSOCIATION (608/262-2762)
7226 Social Science Building, University of Wisconsin, 1180 Observatory Drive, Madison, WI 53706

Sincerely yours,

IRRA President 1990

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Book orders and requests for prices and order forms for other IRRA publications (including Proceedings of the Annual and Spring Meetings and Membership Directories) should be sent to the IRRA office.

INDUSTRIAL RELATIONS RESEARCH ASSOCIATION
7226 Social Science Building, University of Wisconsin,
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