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THE EFFECTS OF CORPORATE STRATEGY AND WORKPLACE INNOVATIONS ON UNION REPRESENTATION

THOMAS A. KOCHAN, ROBERT B. MCKERSIE,
and JOHN CHALYKOFF*

This paper explores the decline of union membership within partially organized firms. Using data from two Conference Board surveys of labor relations practices (1977 and 1983), the authors test a series of propositions concerning the effects of corporate industrial relations values and strategies and workplace innovations on union representation and membership. The results show that whereas the average firm reduced the number of workers represented by unions by approximately 977 from 1977 to 1983, firms that placed a high priority on union avoidance reduced union representation by an average of 2,647 workers over the same period. Moreover, the typical firm that emphasized union avoidance reduced the probability that its new facilities would be organized from approximately 15 percent to less than 1 percent.

IT is now well established that the proportion of the work force unionized has declined precipitously over the past three decades from a peak of around 35 percent in the mid 1950s to less than 20 percent in 1984.¹ Some of this decline, perhaps as much as 40 percent, is accounted for by changes in the industrial, regional, and occupational distribution of the labor force

(Farber 1985; Freeman 1985; Dickens and Leonard 1985). Some of the decline may also be caused by the increase in illegal employer behavior in representational election campaigns (Dickens 1983; Weiler 1983) or during initial contract bargaining (Cooke 1985; Weiler 1984).

This paper explores another important source of union decline that interacts with those mentioned above, namely, the decline of union membership within partially organized firms that results from managerial strategies and values formulated outside the reach of traditional industrial relations processes or union policies. Specifically, we present a series of propositions that test for the effects on union representation and membership of corporate industrial relations values and strategies and workplace innovations that have developed in the recent period of intense economic and organizational restructuring.

Our purpose is to demonstrate how man-

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¹The lack of comparable data on union membership and definitional differences in both the numerators and denominators of unionization estimates make it difficult to provide precise statements about the specific year in which union coverage was highest and how that number compares to current estimates. See Dickens and Leonard (1985) for a discussion of membership data from the 1950s, Freeman and Medoff (1979) for estimates from the 1960s and the 1970s, and Adams (1985) for Bureau of Labor Statistics estimates for the 1980s.

agerial policies and practices at the highest level of corporate decision making bring about changes in industrial relations in the workplace, and how, over time, they alter the structure of the industrial relations system. Our investigation will illustrate the need to consider more carefully the linkages between seemingly isolated or independent policies and practices evolving at different levels of industrial relations activity. The specific propositions to be tested are drawn from the findings of case studies conducted over the past four years by members of our larger research group and are embedded in the strategic choice theoretical framework we have proposed for analyzing the dynamics of the U.S. industrial relations system.

Theoretical Framework

In a previous paper (Kochan, McKersie, and Cappelli 1984) we proposed the need to consider three tiers or levels of industrial relations activity in firms: the highest level of strategic decision making within firms, unions, and government agencies; a middle level at which collective bargaining or personnel policy decisions are negotiated or designed; and the workplace, where individuals and work groups interact directly with supervisors and (where present) local union representatives. In our view, the dynamics of industrial relations systems can best be explained by tracing the effects of changes in environmental conditions on the choices the parties make at these three levels of activity, the effects these choices have on activities under way at the other levels, and the effects that choices made by one party have on the responses of the other actors in the industrial relations system.²

The propositions presented in Figure 1 apply this general model to the specific question of interest in this paper: What accounts for the decline in unionization

within partially unionized firms? The propositions focus on two strategic-level variables: the priority top management gives to union avoidance, and the number of new plants or facilities opened. These strategic variables are expected to influence the degree of innovation introduced at the workplace level in nonunion facilities. In turn, the combination of strategic and workplace variables is expected to lower the percentage of new facilities that get unionized and reduce the number of union members employed by the firm. To show how we derived these propositions, we will summarize briefly some of the case study data collected in the early stages of our research.³

Case Study Evidence

In the initial stages of our research (1980–82), interviews were conducted with managers and union leaders from various firms in growing, stable, and mature or declining industries. These interviews gave us the first signs that a number of changes had occurred in the management of industrial relations in these firms that, in turn, were associated with longer-term and deeper changes in the demographics of union and nonunion employment within the firms.

One of the first changes observed was the more open acknowledgment of the priority most firms, particularly firms with relatively lower levels of unionization, attached to operating “union free” wherever possible. Of course, American managers have always preferred to operate independently of unions, but our interviews disclosed a new openness and intensity in the statements and actions supportive of the belief that “there is no need for third party representation” for employees.

Reinforcing this more open discussion of the centrality of union avoidance strategies was the recognition that few of the firms that had experienced growth and diversification over the past twenty years had experienced any corresponding growth or expansion of unionization. Unions had

²The strategic choice model we are developing parallels a growing British literature on the role of management strategy in industrial relations. See, for example, Thurley and Woods (1983); Purcell (1981, 1983); Gospel and Littler (1982); Winchester (1983); and Sisson (1983).

³These and other case studies and the strategic choice model will be discussed in more detail in Kochan, Katz, and McKersie (forthcoming, 1986).

generally become concentrated in the older, more mature industries, the older firms of industries with large numbers of new entrants, the older divisions of multi-divisional diversified firms, and the older plants of firms that had opened a number of new facilities since the 1960s. Several examples will illustrate this point.

In one large industrial products firm with an old and highly profitable division and a new high-technology division that had experienced rapid growth in the 1960s and 1970s, nearly all of the production and maintenance workers in the old division are unionized and none of the workers in the growth division are organized. The company is known nationally for its innovative human resource management policies and its progressive role in various community service projects. Its stated personnel policy is to work cooperatively with unions where they exist and to manage in ways that assure unions will not be needed in any new facilities that are opened.

A similar pattern was found in a large chemical manufacturer that negotiates agreements with a number of international and independent unions. In this firm, unionization is concentrated in the plants that were organized in the 1940s and 1950s. Over 80 organizing drives were initiated in plants of this firm since 1960, but only five resulted in union victories, and these were all in very small facilities. None of the eight major plants of the firm opened after 1960 have been organized. This firm has experimented extensively with various forms of participation and other human resource management innovations in its nonunion plants.

Another firm in this industry reported that it had moved from a policy of encouraging and supporting independent unions in the 1940s, so as to avoid organization by national AFL-CIO affiliated unions, to opposing both organizational raids of existing independents by AFL-CIO unions and all unions (independent or national) in unorganized plants. Moreover, the later policy has been successful. Despite significant coordinated attempts by national unions to challenge several of the independents and to organize nonunion plants, no changes in representation have occurred

in this firm during the 1970s or 1980s.

Our final example, based on specific plant-by-plant data from a large highly diversified firm with divisions in growth, mature, and declining sectors of the economy, illustrates how different in age are union and nonunion plants. Of the approximately 80 domestic plants of this firm, about 30 are unionized, and those 30 plants employ approximately 50 percent of the firm's domestic blue-collar work force. This firm grew rapidly throughout the 1960s and 1970s, first by acquiring existing facilities and then by opening new plants. (Only one of the new plants was ever organized, and it has since closed.) In 1982, the average age of the firm's unionized plants was 44 years, and that of its nonunion plants was 18 years (Verma 1983).

This firm negotiates contracts with a variety of national and independent unions, all on a decentralized, plant-by-plant basis. No single union represents more than 10 percent of the blue-collar work force. As we will argue more fully later, this decentralized structure and the lack of any single dominant union (one that is able to deal with the company at a corporate level, where the firm's long-run business and industrial relations strategies are devised) help explain how and why the long-term decline in union status in this firm could occur steadily without serious challenge from the unions representing employees in the older plants.

The above examples of union-management relations in partially unionized firms with decentralized, multi-union bargaining structures contrast with the patterns that emerged from case study data on more highly unionized firms with centralized bargaining structures and a single dominant union representing blue-collar workers. Firms in the trucking, aerospace, retail food, automobile, and steel industries that fit this pattern had (1) a higher prevalence of formal or informal agreements to extend unionization or to remain neutral in organizing drives in new facilities, (2) more employee involvement or other participatory management activity under way in unionized facilities, compared to union plants of partially organized firms, (3) greater union involvement or support for

Figure 1. Propositions.

-
1. The lower the percentage of the firm that is unionized, the more likely it is that the firm will assign a high priority to union avoidance.
 2. The higher the priority assigned to union avoidance, the greater the number of innovations in workplace human resource policies introduced in nonunion establishments.
 3. The higher the priority assigned to union avoidance, the lower the probability of unionization in new establishments and the greater the decline in the number of workers represented by unions in the firm.
 4. The more new plants or establishments opened, the greater the decline in union representation within the firm.
 5. The more innovations encouraged in nonunion establishments, the greater the decline in union representation in the firm.
 6. The higher the percentage of a firm's workers represented by a single union, the smaller the decline in union representation in that firm.
 7. Union representation elections have not generated enough new union members to offset member losses due to managerial strategies, new plant openings, and workplace innovations.
-

these participatory experiments, and (4) more consultation and exchange of information between high-level corporate executives and union leaders.

Thus, from these case studies we began to see major divergent patterns in U.S. industrial relations between firms with different historical rates of unionization and structures of collective bargaining. It also was apparent that the first set of firms described above represented the dominant emerging pattern.

The case studies also provided the empirical basis for the strategic choice framework we adopted and for the more specific propositions presented in Figure 1. We will now test those propositions with the help of data collected in two sets of surveys conducted by Audrey Freedman of the Conference Board.

Stimulus for Change

The case study evidence reviewed above suggests that major changes have occurred in the internal organizational policies and practices of management of industrial relations. All theories of social or economic change begin, however, by arguing that strong external stimuli are needed to induce major adaptations in social systems or organizations. Therefore, before we begin our analysis of the magnitude of the changes and their effects on industrial relations, we need to specify what we see as the

dominant source of pressure for change operating on the U.S. industrial relations system in the past decade, namely, increased product market competition.

Some of the product market changes have arisen out of pressures from lower-cost domestic and foreign producers, and others may reflect changes in the structure of markets caused by greater uncertainty, more specialized consumer tastes, and shifting technologies that make it possible to meet these more specialized tastes efficiently (Piore and Sabel 1985). Some of the pressures have increased at a gradual and steady pace over the 1970s and into the 1980s as markets have become more exposed to international competition and as the size of the domestic nonunion sector has grown. More abrupt pressures resulted from the deregulation of markets in industries such as airlines, trucking, and communications. Regardless of their source or speed, increased competitive pressures set in motion a series of strategic choices for managers that eventually affect industrial relations practices at all levels of the firm (Kochan, McKersie, and Cappelli 1984).

Although we are not able to test for or to follow all of the potential paths of adjustment, in the remainder of this paper we will trace the consequences of increased economic pressures to changes in the way industrial relations at the workplace is structured and managed, and the effects of these changes on labor union membership.

Data and Analysis

The following analysis utilizes data from two Conference Board surveys of labor relations practices (Freedman 1979, 1985). The first survey was administered in 1977 and provided a sample of 668 large firms with some unionization of their employees. A 1983 followup survey provided another cross-sectional set of data from 409 firms. Panel data from the same firms are available from the two surveys for approximately 243 cases. In some of the analyses that follow, we will draw on the panel of firms from which data are available from both surveys; in others, we will use the 1983 cross-section.

Missing observations on some of the variables further reduce the sample sizes for some of the analyses. Approximately one-third of the observations could not be classified into a single industry because of the diversified nature of their businesses or because they failed to provide the data needed to construct this variable. Among those that could be classified into a particular industry, 75 percent are from the manufacturing sector. About half of the nonmanufacturing firms are utilities and the rest are from various transportation, trade, and other service industries. The average firm in the sample employed 12,734 employees in 1983, of which 37 percent were unionized. Means, standard deviations, and description of the variables drawn from the surveys are provided in an appendix that is available from the authors on request.

Management Choices/ Adjustment Strategies

Our strategic choice theory argues that external pressures interact with the ideologies or basic values and business strategies of top decision-makers to influence industrial relations activities. These choices take place in specific historical settings, and thus adjustments of choices must be made in increments determined by the current position of the parties.

Our data allow an examination of the effects of one key management value or ideology (Bendix 1956), namely, the

importance or priority the firm attaches to avoiding further unionization of its employees. As noted above, whereas a *preference* for operating without unions is deeply ingrained in American managerial ideology, the actual priority given to acting on this preference is conditioned by the *feasibility* or the costs of doing so. The feasibility, in turn, depends basically on how highly unionized the firm is.

For example, when respondents were asked, "Which is more important to your firm, keeping as much of the company as possible nonunion or achieving the most favorable bargain possible?" the best predictor of the priority assigned to staying as nonunion as possible was the percentage of the firm unionized at the time (Freedman 1979; Freedman 1985). Specifically, the correlation between the percent unionized and the priority given to union avoidance was $-.43$ in 1977 sample and $-.57$ in the 1983 sample. That is, as our case studies suggested, those firms that are more highly unionized have fewer opportunities to avoid unions. Also, if such firms followed a union-avoidance strategy, they would jeopardize their relationships with existing unions.

The percentage of firms in the panel sample giving top priority to union avoidance increased from 31 percent in 1977 to 45 percent in 1983. Most of this increase occurred among firms in the middle ranges of the distribution of the percentage of current employees unionized (Freedman 1985). For a variety of reasons, an increasing number of firms that were on the borderline have found it both more desirable and more feasible to give greater priority to union-avoidance objectives. The question of greater interest to us, however, is: How much does the choice of this industrial relations objective affect other activities and outcomes of the system? As we will see below, the effects of this choice are quite substantial.

The Nature and Extent of Workplace Innovations

We now turn to analyzing the types of innovations or changes in workplace practices that are under way as part of the efforts

of firms to implement various business and industrial relations strategies. Given the dichotomy observed between firms giving priority to union avoidance and those stressing union accommodation, a given program of plant-level innovations can only be understood in light of the particular history, values, and environmental pressures of the firm under consideration. In general, the workplace innovations that we will examine in this section emerged first among firms that were seeking either to remain nonunion or to expand the nonunion sector, and only later emerged in highly unionized firms as they sought to respond to increased competitive pressures (see Kochan, Katz, and Mower 1984:4-9).

Elsewhere, we have proposed that workplace industrial relations systems need to perform three sets of generic functions: provide due process and conflict management or resolution processes; establish principles or rules governing the organization and modification of work systems; and communicate with and manage the commitment, trust, and motivation of individual workers and work groups (Katz, Kochan, and Weber 1985). Table 1 reports the frequency of innovations at the workplace that map these three dimensions.

The bottom set of numbers in Table 1 reports the amount of employee participation and information sharing by management in *union* and *nonunion* plants of

Table 1. Workplace Innovations in Union and Nonunion Establishments: 1983 Conference Board Survey.
(N = 409)

Question	% Yes	
<i>Does your company encourage managers to set up any of the following for nonunion groups?</i>		
Formal complaint or grievance systems	72.9	
Employee participation programs	71.9	
All salaried compensation systems	34.2	
Profit sharing plans	33.3	
Work sharing	31.8	
Flexible work schedules	29.3	
Payment for knowledge compensation systems	19.8	
Autonomous work teams	19.3	
<i>Does your company have the following employee participation activities among union or nonunion employee groups?</i>		
	Nonunion	Union
Employees are given information on competitive or economic conditions affecting them	85.8	77.8
Employees meet in groups to discuss production or quality problems	67.0	55.7
Employees are given information on their work group's quality or productivity performance	49.6	50.9
Employees receive productivity or gain sharing bonuses	23.0	18.2

Source: Freedman (1985).

the firms responding to the 1983 Conference Board survey. The top set of numbers reports the percentage of firms that encourage a broader variety of work organization and due process innovations in their *nonunion* settings. Unfortunately, the respondents were not asked whether or not the more extensive innovations listed in the top half of the table were being encouraged among union employees.

The results in Table 1 indicate that a majority of these firms are engaged in employee participation and information sharing programs with both union and nonunion groups. Less than one-fourth, however, have implemented productivity sharing or bonus payments as part of these efforts. In all cases, slightly more activity with nonunion than with union groups is reported. Similarly, a very high percentage (72 percent) of firms report encouraging the use of grievance procedures in nonunion settings. Finally, between one-fifth and one-third of the firms report encouraging the use of new forms of work organization and compensation systems (for example, autonomous work teams, payment for

knowledge systems, and all-salaried systems) in their nonunion settings.

Determinants of Innovation

The data on the extent of employee participation under way in the union and nonunion plants of these firms presented in the bottom half of Table 1 allow us to compare directly the organizational factors that affect workplace innovations in union and nonunion facilities of the same firm. As noted earlier, we expect the determinants of innovation to vary across union and nonunion plants, depending on the priorities management puts on union avoidance. Where corporate management places a high priority on union avoidance, we expect management to concentrate its innovative efforts in its nonunion facilities in order to help deter unionization. But in firms where union avoidance is not a high priority because a high percentage of the firm is already unionized, management is expected to concentrate on introducing innovations in its unionized operations.

The regression results presented in Table

Table 2. Determinants of Workplace Innovations in Nonunion and Union Facilities.
(N = 282)

Variable	Nonunion Facilities		Union Facilities	
	(1)	(2)	(1)	(2)
Union Avoidance Strategy Emphasized		.139 (.140)		-.333** (.142)
Percentage of Firm Organized	-.709** (.310)		.483 (.319)	
Union Participates in Innovations	.034 (.142)	-.008 (.142)	.451*** (.146)	.474*** (.144)
Competitive Pressures on Firm (Foreign and Domestic)	.032 (.021)	.033 (.021)	.023 (.022)	.023 (.021)
Power of Line vs. Industrial Relations Executives	.098** (.039)	.107*** (.039)	.076* (.040)	.074* (.040)
Industry (Manufacturing = 1, Nonmanufacturing = 0)	.485*** (.172)	.540*** (.172)	.561*** (.177)	.542*** (.174)
Number of Employees (Thousands)	.008*** (.003)	.009*** (.003)	.010*** (.003)	.010*** (.003)
F	6.99***	6.18***	7.59***	8.21***
R ²	.14	.12	.15	.16

*Significant at the .10 level; **significant at the .05 level; ***significant at the .01 level. Standard errors in parentheses.

2 are consistent with these expectations. The dependent variable used in each of these analyses is the sum of the number of employee participation activities reported to be under way in the union or the non-union plants.⁴

The results show that the extent of innovation in *nonunion plants* is positively (although not significantly) associated with a management strategy that places a high priority on union avoidance and is negatively related to the percentage of the firm's current work force organized. On the other hand, innovation in *union plants* is negatively associated with a union avoidance strategy and positively (although not significantly) associated with the percentage of the firm's current work force unionized.⁵ Union support for and involvement in these programs also increases the amount of innovation under way in union plants.

The results on several of the control variables included in these regressions suggest several additional reasons why these workplace innovations have diffused in recent years. An index of the importance of competitive pressures operating on the firm was positively related to degree of innovation in both union and nonunion facilities. Granted that the indicator of economic pressures we used is a crude, subjective one, the relationship it shows is consistent with our view that external market and competitive pressures are important stimuli to innovation.⁶ Innovation is also positively

associated with firm size and being in a manufacturing industry.

An index of the power of line management (as opposed to industrial relations staff) in industrial relations and human resource management policies was also positively related to the degree of workplace innovation in both union and non-union facilities. In another part of our research we have argued that line managers have been asserting greater control over industrial relations policy issues because the industrial relations and human resource management professionals were slow to change (see Freedman 1985 for a similar argument). As competitive pressures mounted, it was the line managers who first argued for changing work rules and finding ways to introduce greater flexibility and cooperation into the workplace. The regression results presented in Table 2 are consistent with this argument: The greater the power of line managers on industrial relations and human resource issues, the more workplace innovation.

It is also interesting to note that union participation in these innovative activities is positively associated with the degree of innovation in *unionized* facilities but has no significant relationship with innovation in *nonunion* facilities. This finding is consistent with a conclusion reported in our case studies of worker participation that unions are more willing to support and participate in innovations at the workplace when firms are not engaged in corporate-level strategies designed to undermine union security by deterring organization of new facilities (Kochan, Katz, and Mower 1984). Again this finding illustrates the value of considering how strategic-level management policies influence the workplace policies and

⁴Additional regressions were conducted using the full list of workplace innovations "encouraged" in nonunion facilities. The results (available from the authors on request) are identical to those presented in columns (1) and (2) of Table 2.

⁵The linear assumptions of the regression analysis are blind to some important differences in the use of innovations within the union and nonunion firms. On the nonunion side, innovations are used most frequently where unions are absent or only partially present (in other words, to implement defensive and transition strategies), whereas on the union side innovations are used most frequently in partially organized firms where the pressure emanating from the nonunion "model" is greatest.

⁶One of the limitations of the survey is that it does not contain good objective measures of the economic environment facing each firm. We therefore supplemented the survey by adding a series of industry characteristics: industry growth, 1970-80; import penetration; percent industry unionized; labor costs

as a percentage of total sales; and concentration ratio. Unfortunately, most of these measures were only available for manufacturing industries. As a partial check on the results of the analyses reported in this paper, all regressions were rerun using only the sample of manufacturing firms. The effects of variables discussed in this paper did not appreciably change in the regressions. In no cases did the signs on the coefficients change. Moreover, most of the coefficients that are significant in the analysis remained significant in the manufacturing equations. The results of these regressions are available from the authors upon request.

Table 3. Determinants of the Percent of Establishments Opened Between 1975 and 1983 That Were Organized in 1983.

Variable	Panel A		Panel B		Panel C	
	Coefficient	Percentage Impact ^a	Coefficient	Percentage Impact ^a	Coefficient	Percentage Impact ^a
Number of Workplace Innovations in Firm's Nonunion Plants	-.111*** (.035)	-.025	-.102** (.042)	-.022	-.106*** (.034)	-.023
Union Avoidance Strategy Emphasized	-.913*** (.184)	-.203	-.804*** (.253)	-.178	-.710*** (.210)	-.157
Percentage of Firm's Employees Represented by Largest Union in 1983	2.053*** (.420)	.456	1.075** (.480)	.238	1.635*** (.469)	.362
Number of Elections Union Won in Total Firm in 1975-83	.051 (.074)	.011	-.021 (.100)	-.004	.043 (.074)	.009
Percentage of Firm's Employees Unionized in 1977			1.483** (.614)	.329		
Percentage of Firm's Employees Unionized in 1983					1.054* (.539)	.233
F	23.32***		14.05***		19.67***	
R ²	.30		.33		.31	
N	217		146		217	

^aPercentage Impact Calculation:

$$B \frac{\left[\left(P + \frac{1}{2N} \right) \left(1 - P + \frac{1}{2N} \right) \right]}{1 + \frac{1}{N}}$$

where P = mean of percentage new establishments organized in 1983; N = mean of new establishments opened; and B = unstandardized coefficient.

*Significant at the .10 level; **significant at the .05 level; ***significant at the .01 level.

behavior of both management and unions.

Consequences of Management Strategy and Innovation

The final set of analyses presented here tests our propositions concerning the effects on union membership of management strategies that follow the path of economic and organizational restructuring through union avoidance, the opening of new plants, and innovations in work organization in nonunion facilities. These and other survey data demonstrate that our case study results generalize to a large cross-section of firms. Firms in the 1983 cross-sectional sample opened 2,335 plants between 1975 and 1983. Of these, only 341, or 14.6 percent, are unionized. A similar result was

obtained in a recent study of plant location decisions by Schmenner (1982).

In Table 3 we present results that test our propositions concerning the factors influencing the proportion of new plants opened that are unionized. Because the dependent variable for these analyses can vary from between (and including) zero and one, a Haldane logit transformation was used in these regressions.⁷ The coefficients

⁷We wish to thank William Dickens for suggesting the following calculation, which transforms the dependent variable, percentage of new establishments organized, into the Haldane logit specification:

$$P = \ln[(PN + T)/(1 - PN + T)],$$

where P = the transformed dependent variable; PN = percent of new establishments organized; and T = 1 divided by 2 times the number of new establishments opened. When this transformation is applied to

were then transformed to compute the percentage effects each variable has on the proportion of new plants organized. These percentage estimates for an average plant are shown in column 2 of each regression. Panel A presents the basic equation. Panels B and C add as a control variable the percentage of the firm's employees unionized in 1983 or 1977. Since both of these measures are highly correlated with the union avoidance strategy, we will primarily focus on the results presented in Panel A.

The sample is limited to 219 cases, since we include only those firms that opened one or more plants and for which there are no missing data on any of the independent variables. The model tested included our index of the amount of workplace innovation occurring in the nonunion plants (simply the sum of the number of employee participation, due process, and new work organization practices encouraged in nonunion settings); a dummy variable that takes the value of one if the firm gives a high priority to union avoidance and zero otherwise; a measure of the percentage of the firm's employees in 1983 represented by the largest union (since in our case study analysis we have argued that having a single large or dominant union increases the ability of workers to influence the strategic decisions or behavior of the company and therefore to gain employer neutrality or extension of representation rights in new facilities); and a measure of the number of elections won by unions in the firm between 1975 and 1983, included to assess whether unions have been able to offset the effects of corporate management and workplace strategies by means of the conventional procedures for union organizing.

Based on the propositions outlined in Figure 1, we would expect negative signs on the union avoidance and innovation coefficients, and a positive coefficient on the percentage of the firm's employees represented by its largest union. The results

are consistent with these propositions. Moreover, the magnitudes of these coefficients indicate that management strategies have substantially affected the probability of new plants being organized.

The coefficient on the innovation index translates into an estimate that for every additional workplace innovation, the probability that a new plant becomes organized decreases by 2.5 percentage points. Evaluated at the mean of this variable (5.77), a firm that engaged in the average amount of innovation in its nonunion plants reduced the risk of being organized by approximately 14.4 percentage points compared to a firm that implemented none of these innovative practices. The coefficient on the union avoidance variable implies that a firm that placed a high priority on union avoidance reduced the likelihood of its new plants being organized by 20.3 percentage points compared to one that placed a lower priority on this objective.

The positive coefficient on the variable measuring the number of elections won by unions, although it is not significant, implies that each union election victory increased the percentage of new plants organized by approximately 1.0 percentage point. Note, however, that election victories alone have added relatively few new members compared to the members unions lost due to management strategies. In this sample the average firm experienced less than one union victory between 1975 and 1983. Evaluated at the mean of this variable (.537), the average firm experienced less than a one percentage point increase in the proportion of its plants being organized through representation election activities.

A much more important path to union representation in new plants appears to have come from having a large dominant union representing employees in the company. An increase of one standard deviation in the percentage of employees represented by the largest union in the firm translates into a 9.1 percentage point increase in the probability of union representation in new plants opened by these firms.

The central conclusions we draw from this analysis are: management innovations and union avoidance strategies substan-

experimental data, observations are usually weighted to correct for heteroscedasticity. Dickens (1985) argues that this is not necessary when data are grouped by common observed characteristics, as they are here (by firm).

tially reduced the probability of organization of new plants; union representation election victories have not offset these management strategies; and larger unions that were able to obtain either neutrality pledges or voluntary recognition from management have had a more substantial offsetting effect than unions that have attempted to gain recognition via the election process.

We will now turn to a more direct accounting of the numbers of union members that have been lost in the firms in the 1977–83 panel as a result of these managerial strategies and changes in economic conditions.

Table 4 presents the results of a series of regression equations that estimate the effects of managerial strategies, competitive pressures, and economic restructuring on the number of workers represented by

unions in the firms in the 1977 and 1983 panel. We recognize that a more complex modeling of the causal relationships among the variables included in these equations would be appropriate given the theoretical arguments and propositions developed above. For example, innovation was introduced as partly a function of economic pressures; management strategies and innovation are expected to reduce the probability of union elections or election victories or both; and the degree of unionization influences the priorities assigned to union avoidance. Our purpose here, however, is only to provide an overall or summary accounting of the changes in union representation associated with these different forces rather than to map the specific causal paths.

The hypotheses guiding these analyses again flow directly from the propositions

Table 4. Determinants of Change in Number of Employees Unionized, 1977–83.
(N = 225)

Variable	(1)	(2)	(3)	(4)
Percentage of Firm Organized, 1977	−3751.40*** (1065.18)		−4190.34*** (1067.50)	−4862.82*** (1138.18)
Number of Elections the Union Won		−699.73 (445.62)	−856.78* (443.43)	−815.18* (437.98)
Number of Elections the Union Won, Squared		91.36 (101.63)	99.49 (100.83)	91.47 (100.01)
Change in Firm's Total Employment, 1977–83	.243*** (.025)	.238*** (.025)	.246*** (.025)	.244*** (.025)
Number of New Establishments	−144.75*** (43.07)	−102.37** (43.51)	−118.68*** (43.85)	−118.85*** (43.52)
Extent of Domestic Competition	75.24 (99.53)	96.66 (99.90)	87.87 (98.57)	95.47 (98.03)
Extent of Foreign Competition	−218.02** (91.78)	−235.87** (91.46)	−216.90** (90.79)	−205.90** (90.36)
Number of Workplace Innovations in Firm's Nonunion Plants	−211.49** (87.04)	−168.95** (85.61)	−217.15** (86.17)	−217.41** (85.63)
Union Avoidance Strategy Emphasized, 1977				−1609.28*** (559.44)
Union Avoidance Strategy Emphasized, 1983	−915.29* (487.84)		−1156.16** (490.98)	
F	18.25***	16.96***	15.29***	15.77***
R ²	.370	.346	.390	.397

*Significant at the .10 level; **significant at the .05 level; ***significant at the .01 level. Standard errors in parentheses.

listed in Figure 1. Specifically, we would expect that: (1) competitive pressures from foreign and domestic sources, the number of new plants opened, the number of workplace innovations, and the existence of a union avoidance strategy have negative effects on union growth; (2) employment growth is positively associated with union growth, since this measure captures the growth or decline in employment *within stable establishments* once controls are added for the number of new establishments opened; and (3) the number of elections won by unions should be positively associated with union growth. In some of the equations shown in Table 4, the percentage of the firm organized in 1977 is included as a control variable.

The results reported in Table 4 generally support each of these hypotheses, with the consistent exception of the number of elections won by unions. In all of these and several other specifications the coefficient on elections won is negative and in some cases significant. This result, which seems counterintuitive, suggests not only that unions are not offsetting declines in union representation through the election process, but that the elections unions are winning are concentrated in firms in which union representation is declining the fastest.

To test for this explanation more fully, we added a union wins squared term to the equation. Adding the squared term tests whether or not the relationship between union wins and union representation eventually turns positive in settings where unions are winning relatively large numbers of elections. The squared term is positive, although small and not significant at conventional levels. Moreover, it would take an extremely large number of union election wins (approximately 9 per firm in this sample, or 18 times greater than the average number won) for the positive returns implied by the squared term to offset the losses implied by the first order term. Once again, it appears that the conventional strategy of organizing new establishments on a plant-by-plant basis through contested election procedures has not been effective in stemming the decline in the number of

workers represented by unions in these firms.⁸

The other results are consistent with our hypotheses and provide estimates of the magnitudes of the effects of employment change, management strategies, workplace innovations, and new plant openings. The coefficient of .24 on the change in employment variable implies that the number of workers represented by unions increased by approximately 24 workers for every 100 employees added to the firm in existing establishments. This coefficient remains stable over the various specifications of the equation reported in Table 4.

The results of the full model shown in column 4 of the table indicate that the opening of each new establishment reduces the number of workers represented by unions by approximately 119. Since the average firm in this sample opened 3 new establishments during this period, the average loss was approximately 357. The net effects of pressures from foreign and domestic competition evaluated at the means of these variables suggest a loss of approximately 143 union-represented workers over the 1977–83 period due to these factors.

For each new workplace innovation implemented in nonunion plants, the number of workers represented by unions fell by approximately 217. Note, however, that the coefficient on this variable changes considerably across the different specifications, ranging from a low of 169 to a high of 217. Evaluated at the mean of this variable (5.22), these results imply that innovations reduced the number of workers represented by unions by somewhere between 853 and 1,133 per firm over the 1977–83 period. Finally, those firms reporting a high priority on union avoidance reduced their unionized labor force,

⁸It is also possible that unions are involved in representation elections in firms that are shifting substantial employment from old (large) to new (small) plants. Attempting to organize these new plants may be the only recourse for unions caught in this interplay of economic restructuring and union avoidance strategies.

on average, by approximately 1,156 workers more than other firms. Thus, the coefficients on the union avoidance strategy and workplace innovation variables again demonstrate the sizable effects of managerial policies at both the top and the bottom tiers of industrial relations within the firm.

The fact that the union avoidance coefficient remains large and significant after controlling for the effects of workplace innovations suggests that more than innovative personnel practices is being captured by this variable. Undoubtedly it captures some of the aggressive management efforts to suppress union organizing efforts that have been growing in frequency over this period (Weiler 1983, 1984). Indeed, further analysis of this variable showed that unions were twice as likely to lose representation elections in firms that gave union avoidance high priority as in firms that did not. Thus, this variable captures the traditional legal and illegal forms of management resistance to unions that are observed before and during union organizing campaigns.

Conclusions and Implications

The magnitude of the effects of the variables examined in this paper on the ability of unions to organize new facilities and to maintain previous levels of representation can be summarized by comparing an average firm in this sample (a manufacturing firm with 12,700 employees) with an equivalent firm that placed a high priority on union avoidance, opened three new plants between 1977 and 1983, and during that period engaged in the average amount of workplace innovation in its nonunion facilities. The probability that new facilities would be unionized was approximately 15 percent in the average firm but less than 1 percent in firms that gave high priority to avoiding unionization. Moreover, whereas between 1977 and 1983 the number of workers represented by unions declined by approximately 977 in the average firm, in the typical union-avoidance firm the loss was more than two and one-half times as great (2,647).

It is unfortunate that no single data series allows researchers to compare the relative importance of the variables examined in this paper to the effects of changes in industrial and occupational structures and other forms of management resistance and union organizing strategies not captured here. In the absence of such data we cannot determine how much of the decline in unionization was uniquely due to each of these causes. What is clear from the magnitude of the results presented here, however, is that theories of union growth and decline need to consider the managerial strategies, workplace innovations, and structural characteristics examined in this paper. Indeed, a complete theory of union growth and decline will need to consider the interactive effects of exogenous changes in markets, industrial structure, and occupations and the strategic responses of companies and unions these exogenous changes produce.

More generally, the results reported in this paper support our argument that an adequate theoretical framework for explaining the dynamics of U.S. industrial relations requires linking behaviors of management and labor at the workplace to the strategies and decisions initiated at the highest levels of employer and labor organizations. The application of this argument in this paper demonstrates how top-level managerial values or strategies toward unionization and innovations at the workplace affect the ability of unions to maintain or expand their representation. More specifically, our findings suggest that unions cannot stem the flow of jobs and workers to nonunion sectors of firms through the use of conventional organizing procedures.

The long-term, cumulative effects of this pattern have been not only a dramatic reduction in union representation, but a significant decline in union bargaining power in multiplant, multilocation corporations. The lowered bargaining power will continue to influence the process and outcomes of contract negotiations, and ultimately it may force unions to reassess their basic organizing and representational strategies.

Our results further suggest that a decentralized industrial relations system, in which strategic decisions are left to management while unions bargain over the consequences of these decisions and attempt to organize on a plant-by-plant basis, has not served the interests of the workers unions represent during a period of rapid economic restructuring and organizational change. Intensified union efforts to influence management strategy more directly and at earlier stages of decision-making can, therefore, be expected in the future.

This likelihood poses a fundamental public policy question: Should union efforts to influence management strategy be encouraged or (as is the case under current labor law and collective bargaining practice) discouraged? That is, should the principle that it is management's job to make strategic decisions and the union's role to negotiate after the fact over wages, hours, and other conditions of employment be replaced by a policy that encourages or mandates worker or union consultation or participation in management? This question deserves a prominent position on the nation's agenda.

REFERENCES

- Adams, Larry T.**
1985 "Changing Employment Patterns of Organized Workers." *Monthly Labor Review*, Vol. 108, No. 2, pp. 25-31.
- Bendix, Reinhart**
1956 *Work and Authority in Industry*. New York: Wiley.
- Cappelli, Peter, and Robert B. McKersie**
1985 "Labor and the Crisis in Collective Bargaining." In Thomas A. Kochan, ed., *Challenges and Choices Facing American Labor*. Cambridge: MIT Press, pp. 227-46.
- Cooke, William**
1985 "The Failure to Negotiate First Contracts: Determinants and Policy Implications." *Industrial and Labor Relations Review*, Vol. 38, No. 2, pp. 163-78.
- Dickens, William T.**
1985 "Error Components in Grouped Data: Why It Is Not Worth Weighting," working paper. National Bureau of Economic Research, February.
1983 "The Effect of Company Campaigns on Certification Elections: Law and Reality Once Again." *Industrial and Labor Relations Review*, Vol. 36, No. 4, pp. 560-75.
- Dickens, William T., and Jonathan S. Leonard**
1985 "Accounting for the Decline in Union Membership." *Industrial and Labor Relations Review*, Vol. 38, No. 3, pp. 323-34.
- Farber, Henry S.**
1985 "The Extent of Unionization in the United States." In Thomas A. Kochan, ed., *Challenges and Choices Facing American Labor*. Cambridge: MIT Press, pp. 15-44.
- Freedman, Audrey**
1985 *The New Look in Wage Bargaining*. New York: The Conference Board.
1979 *Managing Labor Relations*. New York: The Conference Board.
- Freeman, Richard B.**
1985 "Why Are Unions Faring Poorly in NLRB Representation Elections?" In Thomas A. Kochan, ed., *Challenges and Choices Facing American Labor*. Cambridge: MIT Press, pp. 45-65.
- Freeman, Richard B., and James L. Medoff**
1979 "New Estimates of Private Sector Unionism in the United States." *Industrial and Labor Relations Review*, Vol. 32, No. 2, pp. 143-74.
- Gospel, Howard, and C. Littler**
1982 *Marginal Strategies and Industrial Relations*. London: Heineman.
- Katz, Harry C.**
1985 *Shifting Gears: Changing Labor Relations in the U.S. Auto Industry*. Cambridge: MIT Press.
- Katz, Harry C., Thomas A. Kochan, and Mark Weber**
1985 "Assessing the Effects of Industrial Relations and Quality of Working Life Efforts on Organizational Effectiveness." *Academy of Management Journal*, Vol. 28, No. 3, pp. 509-26.
- Kochan, Thomas A., and Peter Cappelli**
1983 "The Transformation of the Industrial Relations and Personnel Function." In Paul Osterman, ed., *Internal Labor Markets*. Cambridge: MIT Press, pp. 133-62.
- Kochan, Thomas A., Harry C. Katz, and Nancy R. Mower**
1984 *Worker Participation and American Unions: Threat or Opportunity*. Kalamazoo, Mich.: W. E. Upjohn Institute.
- Kochan, Thomas A., and Robert B. McKersie**
1983 "Collective Bargaining: Pressures for Change." *Sloan Management Review*, No. 24, pp. 59-65.
- Kochan, Thomas A., Robert B. McKersie, and Peter Cappelli**
1984 "Strategic Choice and Industrial Relations Theory." *Industrial Relations*, Vol. 23, No. 1, pp. 16-39.
- Kochan, Thomas A., Harry C. Katz, and Robert B. McKersie**
1986 *The Transformation of U.S. Industrial Relations*. New York: Basic Books. Forthcoming.
- Piore, Michael, and Charles Sabel**
1985 *The Second Industrial Divide*. New York: Basic Books.
- Purcell, John**
1983 "The Management of Industrial Relations in the Modern Corporation: Agenda for

- Research." *British Journal of Industrial Relations*, Vol. 21, pp. 1–16.
- 1981 *Good Industrial Relations: Theory and Practice*. London: MacMillan.
- Schmenner, Roger W.**
- 1982 *Making Business Location Decisions*. Englewood Cliffs, N.J.: Prentice-Hall.
- Sisson, Keith**
- 1983 *The Management of Collective Bargaining: An International Comparison*. Oxford: Blackwell.
- Verma, Anil**
- 1983 *Strategic Choice in Industrial Relations at the Plant Level* Ph.D. diss., Sloan School of Management.
- Weiler, Paul C.**
- 1984 "Striking a New Balance: Freedom of Contract and the Prospects for Union Representation." *Harvard Law Review*, Vol. 98, No. 2, pp. 351–420.
- 1983 "Promises to Keep: Securing Workers' Right to Self-Organization Under the NLRA." *Harvard Law Review*, Vol. 96, No. 8, pp. 1769–1827.
- Winchester, David**
- 1983 "Industrial Relations Research in Britain." *British Journal of Industrial Relations*, Vol. 21, pp. 100–115.