DOCUMENT RESUME

ED 254 935 EA 017 600

AUTHOR Cresswell, Anthony M.; Gerdin, Carolyn N.
TITLE Causes and Consequences of Strikes in New York Public School Districts.
PUB DATE Apr 85
NOTE 35p.; Paper presented at the Annual Meeting of the American Educational Research Association (Chicago, IL, March 31-April 4, 1985).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Board of Education Policy; *Collective Bargaining; Comparative Analysis; Contracts; Elementary Secondary Education; Employer Employee Relationship; *Labor Demands; Labor Problems; *Negotiation Agreements; Teacher Administrator Relationship; Teacher Militancy; *Teacher Strikes; *Unions
IDENTIFIERS New York

ABSTRACT

This study tests the fit of competing models of strike causes on a sample of public school districts in New York. The models are based on differing assumptions. One is that strikes are the result of mistakes or imperfect information; the other is that strikes are rational choices made in expectation of gain. The differences in these views are significant, since they can lead to divergent theoretical and policy conclusions. The models were tested by comparing 14 striking districts to a sample of adjacent or closely similar ones that did not strike in the same year. The gross comparison of the contract changes in strike as opposed to nonstrike situations shows at least three clear patterns: (1) there are more contract changes in strike situations; (2) the overall distribution of gains and losses varies from strike to nonstrike situations; and (3) the relationship of union to board gains varies considerably across different subjects. In terms of overall winners and losers, strike situations seem to favor the board to a modest degree, while nonstrike situations favor the union. The evidence overall tends to support a random or error view of strike effects, while the model of rational choice is weakly supported. References are included. (Author/TE)

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Causes and Consequences of Strikes in New York Public School Districts

by

Anthony M. Cresswell & Carolyn N. Gerdin
State University of New York at Albany

Prepared for the American Educational Research Association Annual Meeting. Chicago, April, 1985

Abstract:

This research tests the fit of competing models of strike causes on a sample of public school districts in New York. The models are based on differing assumptions: one that strikes are the result of mistakes and/or imperfect information, the other that strikes are rational choices made in expectation of gain. The differences in these views are significant, since they can lead to divergent policy and theoretical conclusions.

The models were tested by comparing 14 striking districts to a sample of adjacent or closely similar ones which did not strike in the same year. The model of rational choice is weakly supported.

Purpose

This study tests the fit of alternative models of strike causes to data from a sample of public school strikes in New York. There are two closely related parts of the purpose: one is to reveal which set of assumptions is a better basis for understanding the nature of this central phenomenon of labor relations, the other is to apply a improved methods to the investigation of strikes.

Strike Causes

The differing assumptions are key to the theoretical and policy-related understanding of strikes. If one assumes strikes are irrational, resulting from lack of control, inadequate analysis, or incomplete/erroneous information, then attention is focused on the search for mistakes and causes of loss of control. The actors are characterized as having less than adequate control of negotiations, perhaps even as incompetant. Such a view implies that policy should be designed prevent mistakes or reduce thier destructive impacts. Provisions for better information, increases in understanding, improved bargaining skills, or sharpened analytical capacity follow from an

error model of strikes, as do provision of outside help for crisis intervention. There is not a systematic relationship expected between power in the bargaining relationship and the roots of strike behavior.

On the other hand, a rational model focuses attention directly on the power relationship between the parties and the way they assess costs and benefits. A strike is a decision by one or perhaps both of the parties totake the risks and incurr the costs. Their decisions are therefore the focus of attention. Policy intervention is aimed at affecting the assessment of risks and costs of striking. Evidence which strengthens one position or the other thus has implications for both theory and policy.

The methods to examine strikes have not typically included adequate controls for some of the variation in local conditions which can be important. Many studies test the fit of strike models on a sample of strikes, but fail to examine comparable non-striking sites. Other research compares strike to non-strike sites of the same type. But these studies do not adequately control for regional comparisons by the bargainers or the possible influence of local labor market considerations on a small scale appropriate to the information processing capacities of the typical local government negotiator. This research attempts to improve on these problems by selecting a matching cluster of nearby school districts with which to compare the ones experiencing a strike. It also includes a short time span before and after the strike to test for the possible longitudinal effects. These

aspects of the date should show more definitively whether one or the other model is a better approach.

Strikes are of central importance to the understanding of labor-management relations, in schools and elsewhere. This is not so much because of their frequent occurance. In fact, strikes in New York state and local government (including schools) are rather rare. There have been about 120 since 1967, none at all in 1983, and only two in 1984, out of approximately 1500 public sector agreements negotiated each year. Rather because of its frequency, strike action is important because it is the extreme test of power in the bargaining relationship and as such sheds light on the larger process. Even if rare, the threat of strike is ever present and cannot be ignored. And even though strikes themselves are relatively rare, moving near the brink of a strike is much more common. There are several hundred impasses in New York each year (PERB News, 1984), many of which certainly involve the serious threat of strikes, thus affecting the bargaining process.

The importance of strikes is reflected in the attention they receive in the literature and in policy discourse. The problem of how best to characterize the causes of strikes remains a central problem in both cases. Early treatments of strikes, such as Hicks (1957) classic model, emphasizes the role of error. A more complex analysis of strikes by Dunlop (1958) included error as a cause, but included an investment in future gains and attempts to restructure the bargaining relationships as additional causes. More recent work, such as that by Mauro (1982) refines the concept of error in terms of the quality of

the bargainer's information and shows some support for its importance in strikes. Other studies, such as Ashenfelter and Johnson (1969) and Paldam and Pederson (1982) are based on rational models. They also show support for the importance of calculation and economic return as causes. Similar support can be found in behavioral treatments such as that by Delaney (1983). These and other studies (see for example Kaufman, 1982), do not present a definitive picture. The causes of strikes remain cloudy.

Some research points to the characteristics of teachers or of the unions as causes as well. Bruno and Nelken (1975) found that there are teachers with a higher propensity to strike than their colleagues. but a similar study by Nasstrom & Brelsford (1976) yeilded contradictory results. Internal characteristics of the union (in this case in the private sectors) showed only weak at best relationships with strike frequency (Roomkin, 1972). Certainly militancy of individuals and organizations has some part in strikes, but the lack of clear demonstration of this link in the research suggests that other factors are at least as important.

Policy and wage structures would also be expected to affect the propensity to strike, but the evidence has been mixed here as well. The most comprehensive study of this type (Perry, 1977) showed no consistent relationships between policy structures and only weak relatioships with wage patterns.

The lack of clear theoretical dominance is certainly caused in part by the mixed causes of actual strikes. Cooper's (1982) review

of strike research comes to a similar conclusion. It is hard to imagine either a strike based on perfect information or on totally irrational behavior. The question for this study is to see which model fits a small sample so that the degree of fit can be used as a rationale for more detailed examination of both tha causes and consequences of the strike.

The detail is derived from the divergent expectations implied by the assumptions. Strikes as errors should occur at random, showing no clear relationships to economic or social context as determinants, nor should there be a clear pattern beetween strikes and bargaining outcomes; one can as easily win as lose, or stay even in a process driven by the haphazard nature of errors. Some learning may occur due to the errors, therefore strikes should be somewhat less likely or intense where they have occured before.

By contrast, calculated strikes based on somewhat accurate information should be linked to their environment, since the influence of labor markets, fiscal conditions, political support, etc., should be accurately taken into account. Moreover, there should be a pattern of winners and losers, although the parties may change positions through multiple strikes. There should be somewhat of a tendency to repeat strikes as well, since good information and calculation should lead to a payoff, reinforcing the action.

If strikes do produce payoffs, there should be clear differences between a striking district and otherwise comparable nearby ones. These differences should appear in the outcomes of bargaining, and possibly

in the frequency of strikes and impasses, as well as in the finer details of the power relationship between the parties.

METHODS

New York School District Strike Sample

Since the passage of the Taylor Law in 1967, there have been 118 strikes by teachers in New York public school districts and 38 strikes by other employees (PERB Report, 1984). It was not possible to conduct an analysis of the full number, so the study was restricted to a sample of the 15 most recent. The most recent were selected to make it more likely that copies of contracts in force at the time would be available. There were no public sector strikes in New York in 1983 and only two school strikes in 1984, but statistical data were not available for 1984. So the most recent strikes in the sample were in 1982. The sample covers strikes from the 1978-79 school year through 1982. (See Appendix A.)

Cluster Comparison Approach

Each of the striking districts included in this study is examined in terms of a comparison cluster of other districts. The cluster is made up of three nonstriking and one strikeing district, all as close together as possible. The same data were collected for all districts in the cluster. Much of the analysis to follow is based, therefore, on comparisons between the striking districts and the rest of its cluster. Events or changes in the striking school districts may be caused by a variety of factors, only one of which is the strike itself. The cluster

approach provides a basis for distinguishing strike outcomes from other possible influences.

Such an approach depends largely on the degree to which the other districts in the cluster can be thought of as comparable to the striking one. We therefore sought to construct the clusters so that they would be as similar as possible to the striking districts in terms of characteristics likely to be strike-related. These variables are described below. There is also reason to believe that bargaining in local government units is influenced by events in similar, proximate units (e.g., Gerwin, 1974). The degree to which a striking school district departs from others in a similar cluster can thus be evidence of a unique or unusually strong impact of the strike.

The matching of districts in clusters was based on size, resource base, and demographics, so as to be as similar as possible in resources available for and committed to schools, as well as in basic organizational and demographic structure. By reducing variance in these factors to a minimum, strike v. cluster differences can be more confidently attributed to the strike itself. In the absence of direct measures of organizational characteristics, enrollment is used as a proxy for complexity and structure. Resources available and committed to schooling are represented by expenditures per pupil, tax levy per pupil, and equalized assessed property value per pupil. Since property wealth does not account for all the relevant demographic differences, we included the racial/ethnic makeup of the students as well.

To minimize intra-cluster demographic variation, as well as to

approximate a local reference group for bargaining purposes, the members of a cluster are adjacent or as close as possible to each other. In all but two of the cases the cluster is made up of the contiguous or nearly contiguous districts which maintained high similarity in terms of the matching variables. For cities, however, their size and demographic characterisics necessitated matching them with other cities; clusters E and L are thus made up of similar sized cities, not contiguous school districts.

Strike Impacts

Strikes in public school districts can potentially impact everything from the relations between individual teachers and students to the political and economic base of the district. This study was limited to the impacts on negotiated agreements and on allocation of resources. In order to have a common basis for comparison of changes in negotiated agreements, we selected a common set of clauses to be examined in all agreements. That common set would allow for a comparison of the number of changes from agreement to agreement, as well as across districts. The clauses (19 in all) were chosen to span the major subjects of bargaining and to include some items expected to be very common and some which would be relatively rare. The main topic and specific clauses used are shown in Table 1.

Table 1. CONTRACT TOPICS AND CLAUSES

SUBJECT	CLAUSES
Work Load	Class size, length of work day, length of work year, teacher preparation time
Work Rules	Extra duty assignment, just cause, performance evaluation, subs/staffing, maint. of standards
Leave Policy	Pers. leave, sick leave & lv. bank, sabbatical
Insurance	Health, dental, life, vision
Other	Agency shop, retirement incentive

[A brief definition of these terms is found in Appendix B]

Comparing contract changes across districts is complicated by the differences in years covered by each contract, which varied from one to as many as five years in these districts. Consequently the prospective members of a cluster would not necessarily be negotiating contracts at the same time that the strike in that cluster occurred. That made it impossible to select the cluster members with contracts covering the same time span as the strikeing district; that would have necessitated violating the requirment of close matching on the other cluster characteristics. Therefore the analysis of contract changes is based as closely as possibble on only those contracts which were negotiated in the same year as the striking district in that cluster; some districts in the cluster were thus excluded from this aspect of the analysis. With this limitation, we obtained data on changes in contracts from 45 negotiations over the entire sample.

For those districts negotiating during the same year as a strike,

it is most likely that they were actively negotiating on or near the time of the strike. Almost all strikes occur during the period of negotiations between the expiration of one contract and agreement on its sucessor; for school districts contracts typically expire in the summer or fall.

Contract analysis consisted in finding and comparing the appropriate clauses in each agreements before and after the strike, coding the existence of a change, and noting whether it was a gain by the union or board. In most cases this was obvious from the clause itself. For 10 retirement incentives and two other clauses, however, the beneficiary was unclear. These were coded as gains for both parties. No codeing or weighting of the importance or value of the change was used. This would have required detailed information about the priorities of the bargainers which is simply not available except from participation in the bargaining or detailed interviews of the participants.

RESULTS

The first concern is the degree of support found for each of the alternative models of strikes: strike as rational, calculated strategy v. irrational error or outburst. For this overall question the results are thoroughly mixed. Depending on which aspects of the possible impacts are examined there is support for either view. This finding has made it necessary for us to go beyond this overall question to more detailed consideration of the nature of strikes, which will be taken up below, after discussion of the general findings.

With respect to impacts on the contents of contracts, there seems to be support for the rational model. The number of changes of each type in the contracts analyzed is shown in Table 2.

TABLE 2.

CHANGES IN NEGOTIATED AGREEMENTS BY MAJOR SUBJECT

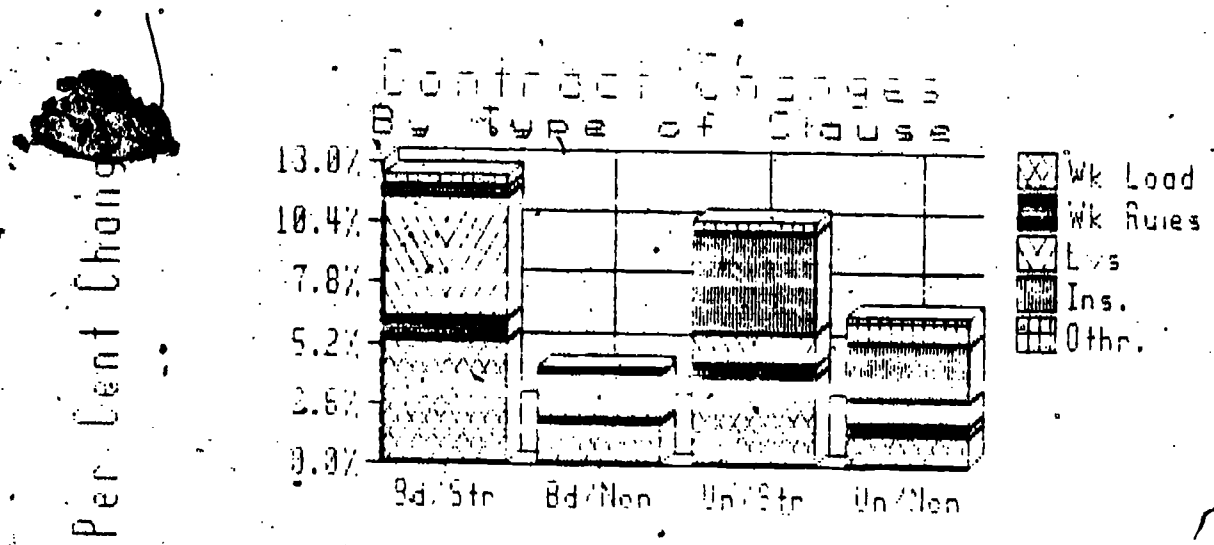
Beneficiary	Work Load #	Work Load %	Work Rles #	Work Rles %	Leaves #	Leaves %	Insurance #	Insurance %	Other #	Other %	No. of Cont.s
BOARD											
Strike	11	25.0%	2	3.6%	11	25.0%	1	2.3%	1	4.5%	11
Non-Str.	11	8.1%	1	0.6%	13	9.6%	0	0.0%	2	2.9%	34
UNION											
Strike	8	18.2%	1	1.8%	3	6.8%	9	20.5%	1	4.5%	11
Non-Str.	9	6.6%	2	1.2%	7	5.1%	16	11.8%	8	11.8%	34

[Per cent changes show the number of changes in contract language relative to the total number of times clauses of that type could have changed.]

The gross comparisons of changes in strike v. non-strike situations show at least three clear patterns: (1) there are more contract changes in strike situations, (2) the overall distribution of gains and losses

varies from strike to non-strike situations, and (3) that the relationship of union to board gains varies considerably across different subjects. The pattern of differences is more clearly shown in Figure 1.

Figure 1



Overall, the volume of changes in strike situations is markedly higher, and the distribution of winners and losers is clearly dependent on the subject of bargaining. Boards are more likely to gain concessions from the unions in work load and leave policy, while the unions gain the preponderance of concessions in the area of insurance (fringe benefits are typically of considerable importance to unions), and work load (specifically class size). While the volume of changes in nonstrike situations is lower, the relationships of gain and loss

remain the same in work load, leaves, and insurance: the board tends to gain more frequently than the union in the same areas, but the gap between the two is smaller.

In terms of overall winners and losers, strike situations seem to favor the board to a modest degree, while non-strike situations favor the union. The advantage that appears to accrue to the board in strike situations is made up of proportionately greater gains in work load and work rules areas. The advantage in favor of the union in non-strike situations reflects greater gains in insurance benefits and agency shop (the category: Other).

This consistency suggests something other than a strictly random or error model of strikes. A strike situation does seem to change the relative gains, as well as increase the volume. In a sense, the stakes appear to go up, and the odds change, though not appreciably. When viewed from the position that unions choose whether or not to strike, the pattern of contract changes suggests such a choice is an error. From the view that boards can deliberately decide to take a strike, however, such a choice would seem to be quite rational, given the overall pattern of gains. It seems appropriate to consider that both sides of the bargaining have some control over whether or not a strike occurs. The contract change data suggest, therefore, that there may be different kinds or levels of calculation and control on opposite sides of the table.

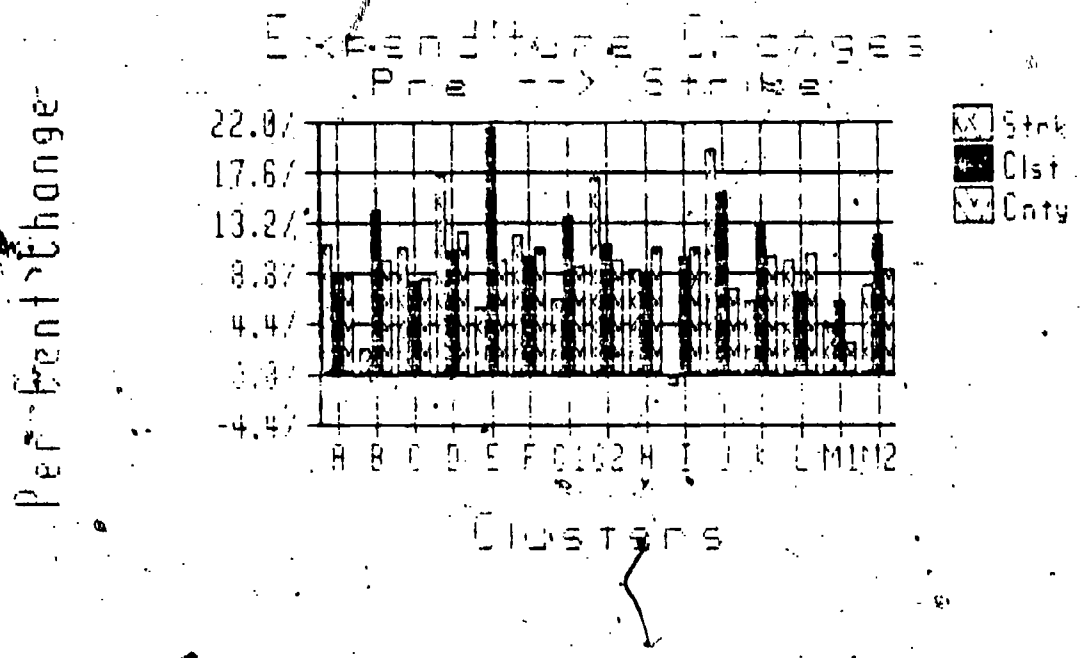
The picture becomes even more complicated when the patterns of change in school resource allocation are included. These possible

impacts of strikes on resource allocation are explored in terms of instructional expenditures, teacher pupil ratio, and tax levy. Instructional expenditures in public schools were used because they are composed of over 80 per cent teacher salaries. Instructional expenditures would reflect salary increases more directly than changes in salary schedules. Analysis of scheduled salary changes per se does not account for the distribution of teaching staff across the schedule. Consequently the percentage increase in a schedule does not necessarily reflect percentage changes in salaries paid. Teacher pupil ratios reflect changes in general workload. Tax levy represents the fiscal effort of the local school district, independent of subvention from state or Federal sources.

In examining the impacts on these variables, we used two changes: one from the year prior to the strike to the year of the strike (i.e., the first school year in which the financial and resource allocation impacts could be observed), the second from the year in which the strike was settled to the following year. The strikes typically occurred early in the school year or involved retroactive agreements, so the year of the strike is the school year in which it was settled. The changes in the strike district are compared to the average changes in the cluster as well as in the county and state for the years in question. The summaries of these comparisons are shown in Figures 2-5. [In these figures the vertical dimension represents the percentage by which that variable changed between the two years indicated. The notation: "Pre --> Strike" indicates the change from the year before

the strike occurred to the year in which the strike occurred. The notation: "Strike -->Post" indicates the change from the year of the strike to the following year.] We turn first to a consideration of changes in expenditures.

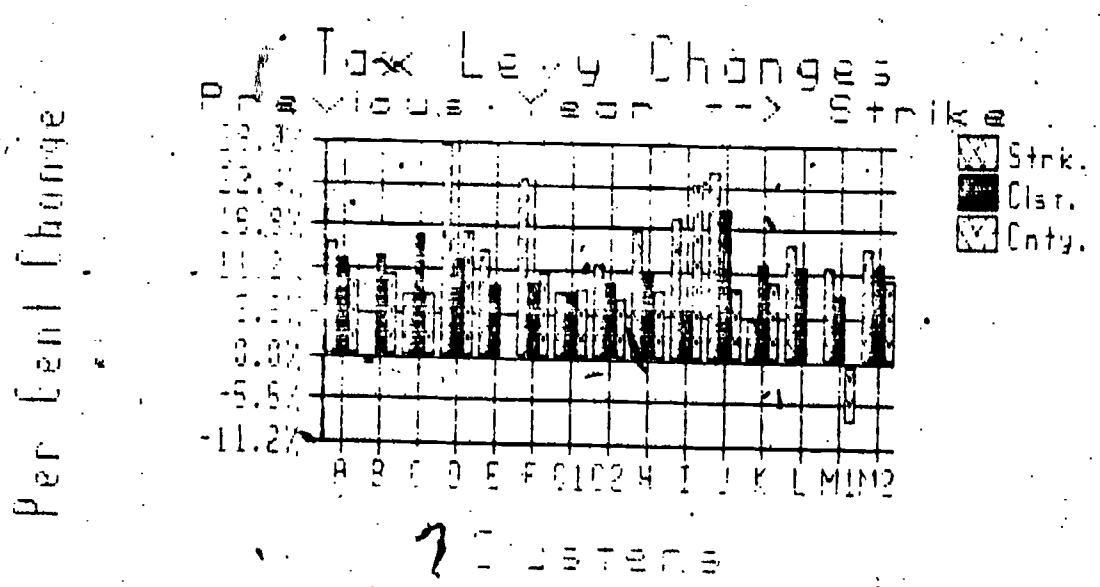
FIGURE 2



The first set of expenditure changes of interest are those associated with a settlement year: the contract and budget following the settlement of a strike in that cluster. First, there is little consistency accross the sample. In four clusters (C, D, G2, & J) the increase in the striking district was greater than would be expected based on the cluster and county. In five others (A, F, H, L, M1, & M2) the increase is about equal to the comparison groups, and in the rest

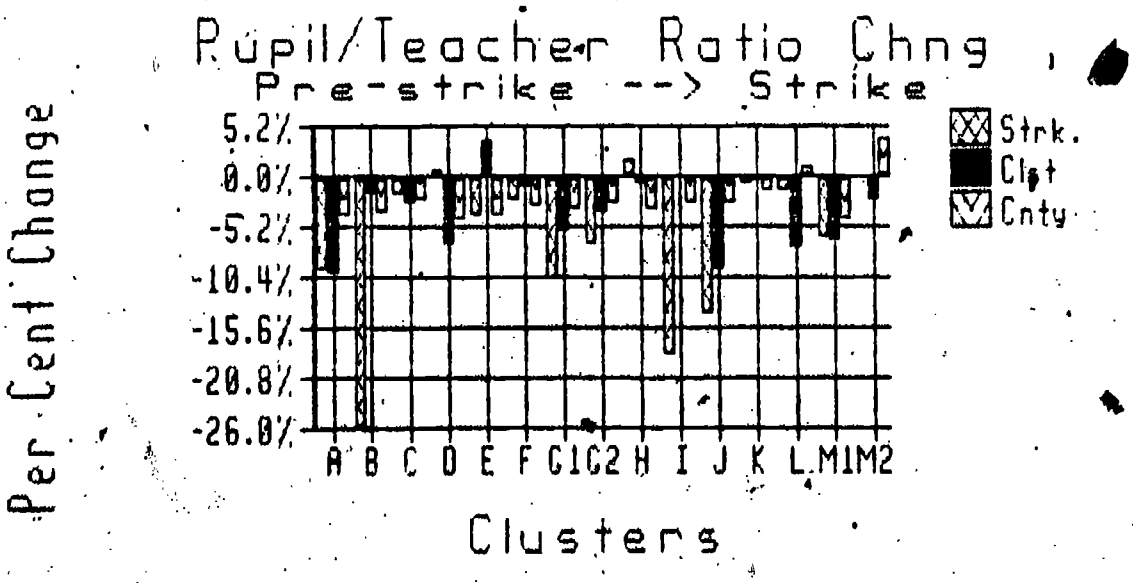
(B, E, G1, I, & K) the increase is lower than would be expected. The remarkably even distribution across these types strongly suggests the lack of a systematic relationship between the occurrence of a strike and the overall amount spent on instruction (i.e., teacher salaries). That is, this evidence supports a random or error view of strike impacts.

FIGURE 3



With respect to tax levy, or effort, however, the pattern is somewhat different (see Figure 3 above). In nine of the clusters the strikeing district shows a larger than expected increase in the levy (clusters A,D,E,F,G2,H,J,L,M1,M2). Three show about the expected increase (C,G1,I), and only two are lower (B,K). It is important to note that in eight of those nine situations of greater-than- expected rises in tax levy, the striking district started out below the cluster. That is, the absolute amount of tax levy per pupil in the strikeing districts was lower than the cxluster in the year prior to the strike. In fact all but two of the strikeing districts were lower than their cluster in absolute tax levy per pupil prior to the strike. Thus striking districts appear to be somewhat lower in local tax effort. This pattern persists to some degree after the strike as well. In eight of the cases tax levies in the striking district in the year following the strike either stayed even or lost ground relative to the other districts in the cluster.

FIGURE 4



Yet a different pattern is apparent with regard to changes in pupil/teacher ratios (Figure 4). One would expect changes in pupil/teacher ratios to be the mirror image of expenditure changes. That is, lowering ratios (i.e., smaller classes) means more expensive instruction, and vice versa. In fact, quite the opposite is seen. Four of the districts which show smaller than expected increases in expenditure were the ones showing larger than expected drops in pupil/teacher ratios. This suggests that in these districts, drops in class size were "paid for" in a sense by smaller than expected salary increases. In fact in two of those apparently anomolous districts (cluster E & I) there was a change in the class size clause as part of the strike settlement, but in only one case was the change toward smaller class sizes in the contract; the other one increased maximum class size.

This apparent contradiction is not particularly troublesome, however. Pupil/teacher ratios reflect actual class sizes in the district; contract language reflects maxima. The average class size or pupil/teacher ratio can therefore change substantially in many cases without respect to the maxima stated in the contract. Class size language in a contract, therefore cannot be taken as an accurate indication of actual class sizes. The evidence of what seems to be "paying for" class size changes out of salary is not consistent across the clusters either. In two cases (G2 & J), the drops in pupil/teacher ratios correspond to larger-than-expected increases in expenditures. In

one of these there was a contractual reduction in class size as part of the strike settlement (G2), but not in the other (J).

This lack of tight relationship between apparently linked variables illustrates an important element of resource allocation decision making at the school district level. In settling a labor contract with teachers, the board can often have considerable discretion with regard to the changes in class size and staffing. It is thus possible to reduce pupil/teacher ratios without inordinately large increases in expenditure if the overall salary settlement is modest.

This discretion would account for the considerable variation in the degree of changes within the sample, suggesting the resolution of some strikes involve markedly different strategies or trade-offs from others. The biggest drops in the ratio are in E. Moriches (cluster B), and in Wyandanch (Cluster I). The strike in E. Moriches occurred in Sept., 1981. It is a small district, with enrollment in 1981-82 of 426 and 37 classroom teachers, 9 of which were part time. Enrollment declined by 10 pupils between the 1980-81 and 1981-82 school year, yet 9 classroom teachers (5 full time, 4 part time) were added to the staff that fall. Without more information it is not possible to conclude that this addition to the staff was related to the strike. There was, in fact, a reduction in staff the following year, producing a substantial increase in pupil/teacher ratios. It would seem that the apparent impact was a transitory one. It is also the case that pupil/teacher ratios can be volatile in a small district where the addition of a small absolute number of staff can have a large

proportional effect. The only other district which shows a relatively large drop in pupil teacher ratios in the year following the strike is Miller Place, another small district (enrollment 2551).

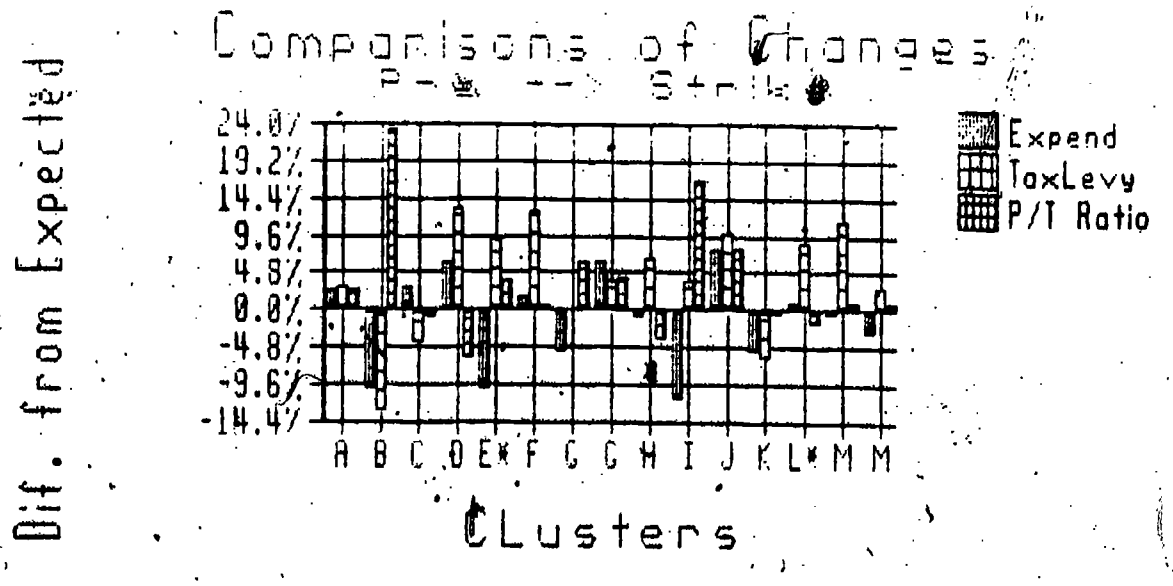
Some aspects of the pattern in Wyandanch (cluster I) are similar: large drop in pupil/teacher ratios accompanied by a relatively small increase in salary expenditures. There seems to be more to the case in Wyandanch, however. In the year following the strike settlement, the expenditure increase was very large, approximately 25 per cent. This suggests that the small increase in salary expenditure in the first year reflects savings caused by the length of the strike (39 days) and the salary freeze imposed as part of the settlement.. The large proportional increase in the second year is in part an artifact of the deflated base the previous year. It does not seem appropriate, therefore, to judge the large proportional increase for Wyandanch in the second year to be evidence of a substantial union gain.

All of the strikes produced multi-year agreements, ranging from 3-5 years in duration. It is appropriate therefore to examine possible effects on resources in the year after settlement. Aside from the observations above, the post-strike year comparisons yield relatively few changed patterns. It does seem significant, however, that in 9 of 14 cases the tax levy increase is smaller in the second year than in the first. Strikes seem to have occured in low effort districts, resulting in a burst of increased effort in the strike year, followed by reversion to form. There is a very large jump in tax levy, however, in New Berlin (cluster C). This is a relatively low-wealth area, so

large increases in tax levy are potentially significant. Moreover, it was not associated with a disproportionate increase in expenditures. This requires more intensive examination in a later phase of this work.

Examining the resource changes separately does not reveal whether there was a pattern in gains or losses when the changes are viewed together. As a way of estimating the overall pattern of changes we compared the increases in the striking districts to the average change of the cluster and county taken together. To keep the direction of the relationship consistent across the three variables the sign for pupil/teacher ratio is reversed, since drops in this measure are interpreted the same way as increases in the other variables. The chart (Figure 5) shows changes in relationship to the expected changes (Cluster/county average) a bar above the 0 line indicates the change in that striking district was greater than the expected, and vice versa.

FIGURE 5



Considering the three indicators together, three strikes seem to

have resulted in consistent union gains: clusters A, G1, and J (Plainedge, Deer Park, and Greenwood Lake). It is worth noting, however, that the G2 cluster is a second strike in Deer Park in which there is not such evidence of union success. Overall there is no clear pattern of boards gained disproportionately or were able to hold the union to less-than-expected gains. With the exception of the consistent increase in tax levies above the reference point (discussed above), there does not seem to be a consistent pattern in the other comparisons. This suggests that in general, the unions seem to have a stronger influence on resource allocations following a strike as compared to non-strike years. But the influences are more in the areas of the district's tax effort and in pupil/teacher ratios than in salaries and related instructional expenditures.

DISCUSSION

The strike sample selected for this study presents such a variety of changes that no single view of the phenomenon seems to fit very well. The strongest evidence for some consistent, systematic effects of strikes is found in the changes in contracts and in tax levys. Both the increase in volume and the change in the proportions of gains and losses is suggestive of consistent effects. The strongest implication is that boards tend to drive harder bargains on control-related issues in a strike situation while unions may accept these losses in return for benefits. It may even be that boards take a much harder bargaining position on these issues generally, and thus are more willing to take a

strike, or conceed elsewhere. The shift in proportion of gains to the board in a strike situatfon also suggests a power shift. Given the penalties for striking employees in New York, this appearance of a power shift may be an important element. Public employees who engage in a work stoppage can lose two days pay for each day of the stoppage, in addition to the loss of dues check-off as an organizational penalty. Once a strike starts, the employees may be under substantial pressure to return to work quickly and minimize the penalty, necessitating greater concessions to the Board on non-economic issues.

Aside from the shift in the distribution of contract changes, strikeing districts also seem to experience a greater number of changes. Clearly a strike raises the stakes of the bargaining, and it's costs. It may therefore require more concessions on both sides to justify the cost and to convince those who must ratify the agreement that enough has been gained to justify the cost of the strike.

An increase in the number of changes may not be a strike effect, however. Strikes would be expected in districts with generally higher levels of conflict and related to more frequent revision of the contract. Generally higher conflict levels would be expected to lead to more frequent changes, since proposals for contract revision generally come from each party's review of problem areas in the previous agreement (Wachter, 1983). More problems should lead to more proposals. It may also take more changes generally to demonstrate to both sides that sufficient gains have been obtained to justify the concessions made.

If this is so, the rate of change in contracts should be comparable in both strike and non-strike years for those districts which have experienced a strike. In the two clusters with two strikes each (G & M), the study covered a sufficient length of time to check for this possibility. There are three districts which experienced strikes where we also have the number of contract changes from a non-strike negotiation. In those districts, there were 19 changes in the non-strike years, 23 in the strike years. The rate in the non-strike years is a bit less than in strikes, but clearly above the pattern for the rest of the districts, which averaged fewer than 5 changes per year. So it seems that both strikes and contract changes may be consequences of persistant, high conflict in the districts.

These generally high levels of conflict in the striking districts also seems to be related to tax effort. The pattern in tax levy changes is much clearer and more consistent than what was seen for the other resource variables. In 11 of the 15 cases the increase in tax levy was greater than the comparison groups in the strike year, but the pattern did not persist in the following year. This low tax effort may be a source of continuing tension resulting from the union's pressure to raise revenues and the board's reluctance to do so.

When viewed as a whole, the findings suggest a view of strikes distinct from the models described above. Strikes seem to be less unique occurrances in their own right and more continuations of the basic bargaining relationships and dynamics, albeit with somewhat higher stakes. There is little evidence that these strikes

fundamentally changed the bargaining relationships or produced large long term gains. With a few important exceptions, the strike settlements seem to differ from other bargaining outcomes more in degree than in kind. Even in those cases where there were large apparent effects, such as the large drop in pupil/teacher ratios in cluster B and the markedly lower expenditure figures for cluster I, there were balancing changes in the opposite directions in the subsequent year. The gross evidence of impact patterns which the study sought is present, but less than powerfully persuasive. Instead a picture of strikes which emerges is one of dramatic but not necessarily decisive events in a larger pattern of bargaining relationships and dynamics.

There is more support for this view in the informal evidence we gathered in the course of the many phone calls necessary to gather fugitive copies of past contracts. One board negotiator reported that the strike in his district was a result of the union's insistence that a restrictive class size clause come <u>out</u> of the agreement. The board refused, took a short strike, and the clause stayed in. This <u>lack</u> of change, an apparent outcome of the strike, could not appear in the data as presented. Similarly, another union chose, inexplicably, to strike on pay day. Strikers therefore received no pay at all untill the strike was over. In this strike, by the board's report, the issue was also removal of a clause. The Superintendent refused, carried a slim majority of the board, and the clause stayed in: another negative impact not shown in the above data.

A more complete and effective accounting for strike causes, it seems, must await a closer examination of more of the details of the parties' objectives and actions. This, in turn, requires more qualitative and behavioral data (which will be pursued in the second phase of this study). In the absence of those data, the conclusions as to whether strikes are errors or strategic acts remains mixed. Such narrow views seem inadequate to deal with the richness of possible causes and consequences. More study is clearly needed of the details of these same strikes, with the benefit of the data already in hand. It appears that strikes must be studied in considerably more individual detail before a clear picture of causes emerges.

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APPENDIX A - DISTRICTS STUDIED

Cluster	STRIKE DISTRICT	STRIKE DATE	DAYS DURATION	CLUSTER DISTRICTS
A	Plainedge	04-Sep-80	2	Bethpage, Rockvl. Center, Wantagh
B	E. Moriches	09-Sep-81	3	C. Moriches, Eastport, S. Manor
C	New Berlin	18-May-79	4	Edmeston, Morris, Richfield Spr.
D	Tupper Lake	09-Dec-80	1	Saranac L., Cliff-Fine, Parrishville
E	Rome	18-Jan-82	8	Auburn, Utica, Schenectady
F	Heuvelton	06-May-82	1	Herm-DeKalb, Lisbon, Madrid-Waddington
G1	Deer Park	28-Sep-79	3	Bay Shore, W. Babylon, W. Islip
G2	Deer Park	17-Sep-82	8	same
H	Miller Place	06-Sep-79	7	Elwood, King's Park Rocky Point
I	Wyandanch	18-Sep-79	39	Hempstead, Roosevelt Westbury
J	Greenwood Lake	20-Jun-80	1	Chester, Florida Highland Falls
K	Clarkstown	02-Oct-80	9	N.Rockland, Spr.Valley Suffern
L	Rochester	03-Sep-80	8	Buffalo, Syracuse, Yonkers
M1	Hicksville	15-May-79	1	Plainvw., Pt.Washington, Syosset
M2	Plainview	17-Sep-81	24	Hicksville, Pt. Washingto Syosset

APPENDIX B - Definitions of Contract Variables

Work Load

Class size: language which defines maximum clas sizes or averages, or which requires extra resources (aides, etc.) if classes exceed a maximum. Advisory or non-binding language coded as not present.

Length of work day & work year: spcification of the maximum length of the work day and number of teaching days per year.

Amount of preparation time: provision of time within work day when teachers are free from teaching responsibility for purposes of preparing lessons.

Work Rules

Extra duties: rules which restrict the board's dicretion in assigning teachers to extra duties during the school day.

Performance evaluation: descriptions of required methods or procedures for teaching evaluation, or specific limitations on the manner in which evaluations may be performed.

Just cause: prohibition of disciplinary action or deprivation of benefits or rights of teachers without just cause.

Maintenance of standards: prohibition of board changing working conditions or standards of work or benefits, even if not expressly covered by the agreement, without negotiation with the union.

Substituting/Staffing: language describing or restricting the way the board can use teachers as substitutes or for short-term assignments within the normal schedule.

Other

Agency shop: all those covered by contract, whether or not members of the union, must pay fee (usually equal to the amount of dues) to the union to cover costs of representation.

Early retirement incentive: extra pay or bonuses for teachers to choose to retire <u>before</u> their normal time. Bonuses for retirement which are not incentives for <u>early</u> action are coded not present.

APPENDIX C - CHANGES IN FINANCIAL VARIABLES

Expenditure Comparisons - Per Cent Change

CLUSTER	PRE-STRIKE -> STRIKE				STRIKE -> POST STRIKE			
	Strk	Clust.	County	State	Strk	Clust	County	State
A	11.2%	8.9%	8.8%	10.0%	12.5%	8.7%	9.2%	10.3%
B	2.2%	14.2%	9.9%	10.0%	5.3%	7.2%	10.4%	9.3%
C	10.9%	8.0%	8.3%	6.5%	6.7%	16.2%	10.1%	10.8%
D	17.4%	10.6%	12.4%	10.8%	8.7%	8.6%	7.4%	10.0%
E*	5.7%	21.3%	10.2%	9.5%	15.5%	8.9%	9.6%	10.2%
F	12.2%	10.1%	10.9%	8.9%	11.9%	14.1%	8.7%	9.3%
G	6.6%	13.8%	9.4%	10.8%	8.3%	8.5%	9.9%	10.0%
G	17.0%	11.3%	9.9%	10.0%				
H	9.1%	8.8%	10.9%	6.5%	9.8%	14.2%	9.4%	10.8%
I	-0.8%	10.1%	10.9%	6.5%	25.7%	5.2%	9.4%	10.8%
J	19.6%	16.1%	7.4%	6.5%	15.7%	8.0%	8.5%	10.8%
K	6.3%	13.0%	10.2%	10.0%	12.5%	11.6%	9.6%	10.3%
L*	9.8%	7.1%	10.6%	10.0%	1.1%	14.0%	10.2%	10.3%
M	4.1%	6.4%	2.8%	6.5%	8.8%	7.7%	8.5%	10.8%
M	7.7%	12.1%	9.2%	10.3%	13.4%	11.8%	9.4%	10.2%
AVERAGES:	9.3%	11.5%	9.4%	8.9%	11.1%	10.3%	9.2%	10.3%

* These clusters contain cities, matched by size rather than proximity. Instead of county averages, the city average was used.

Tax Levy Comparisons - Per Cent Change

CLUSTER	PRE-STRIKE -> STRIKE				STRIKE -> POST STRIKE			
	Strk	Clust.	County	State	Strk	Clust	County	State
A	14.6%	12.6%	11.2%	10.7%	11.2%	11.2%	10.6%	12.2%
B	-1.1%	13.1%	10.6%	12.2%	4.0%	1.1%	7.5%	5.9%
C	7.9%	15.9%	8.1%	1.5%	49.5%	20.5%	18.8%	10.8%
D	27.5%	12.5%	16.0%	10.7%	18.2%	7.0%	13.5%	12.2%
E*	13.8%	9.3%	15.0%	12.2%	29.8%	5.4%	2.4%	5.9%
F	23.1%	9.7%	10.7%	12.2%	10.4%	10.6%	7.6%	5.9%
G	8.6%	8.4%	8.7%	10.8%	11.5%	14.9%	12.0%	10.7%
G	12.1%	9.5%	7.6%	6.9%				
H	16.6%	11.2%	8.7%	10.8%	8.2%	18.7%	12.0%	10.7%
I	18.4%	6.6%	22.7%	10.8%	8.8%	9.8%	11.2%	10.7%
J	24.3%	19.3%	9.3%	10.8%	13.0%	12.1%	8.1%	10.7%
K	5.2%	12.4%	10.1%	10.7%	11.0%	15.2%	8.1%	10.7%
L*	15.0%	12.1%	9.2%	10.7%	5.3%	6.0%	15.0%	12.2%
M	12.0%	8.5%	-7.5%	1.5%	15.0%	9.8%	22.7%	10.8%
M	14.3%	12.4%	10.6%	12.2%	8.0%	9.0%	9.7%	5.9%
AVERAGES:	14.2%	11.6%	9.8%	9.6%	14.6%	10.8%	11.8%	9.7%

* These clusters contain cities, matched by size rather than proximity. Instead of county averages, the city average was used.

Pupil-Teacher Ratio Comparisons
Per Cent Change

CLSTER	PRE-STRIKE -> STRIKE			STRIKE -> POST STRIKE		
	Str	Clust.	County	Str	Clust	County
A	-9.4%	-9.9%	-3.8%	2.6%	-2.2%	-1.3%
B	-25.7%	-1.8%	-3.5%	13.4%	0.2%	-2.4%
C	-1.7%	-2.5%	-2.4%	-7.1%	-8.2%	-8.0%
D	0.7%	-6.8%	-4.2%	-6.0%	-2.8%	-1.9%
E*	-3.8%	3.6%	-3.8%	-10.2%	-6.2%	-0.6%
F	-2.3%	-1.1%	-3.1%	-1.2%	-0.8%	2.5%
G	-10.3%	-5.5%	-3.3%	-1.7%	1.0%	-3.4%
G	-7.0%	-3.6%	-2.4%			
H	1.6%	-0.5%	-3.3%	-16.8%	-8.3%	-3.4%
I	-18.1%	0.1%	-2.5%	10.7%	-6.2%	-3.8%
J	-14.0%	-9.5%	-2.7%	-3.9%	4.0%	-3.4%
K	-0.5%	-0.3%	-1.2%	-9.8%	1.3%	0.0%
L*	-1.3%	-7.1%	1.1%	12.5%	-0.6%	-3.8%
M	-6.1%	-6.6%	-4.2%	4.6%	-3.9%	-2.5%
M	0.0%	-2.3%	4.0%	-7.8%	-4.7%	-7.6%
Averages:	-6.5%	-3.6%	-2.4%	-1.5%	-2.7%	-2.8%

* These clusters contain cities, matched by size rather than proximity. Instead of county averages, the city average was used.