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Positional Power and Propensity to Strike

LUCA PERRONE

EDITORIAL NOTE: Luca Perrone died in a skin-diving accident in August 1980, while this paper was still in draft form and before the research that it reports had been completed. The paper was edited into its present form by Erik Olin Wright.

This paper has two primary objectives. One is to develop a strategy for assessing the "structural power" of strikers, conceptualized as the varying amount of "disruptive potential" endowed upon workers by virtue of their different positions in the system of economic interdependencies. For example, given two categories of workers, such as auto workers and public school teachers, and given the same amount of person-hours struck, which of the two delivers a greater disruptive shock to the economic system, and why? On what grounds can we assess the uneven distribution of such potential among different industrial groups of workers? The other objective is to assess the empirical relationship between this disruptive potential (or positional power) of categories of workers and their actual propensity to strike. In particular, we want to discover whether it is the stronger or the weaker group (in the above sense) that is more likely to resort to the strike weapon.

I begin with a general rationale for studying the structural power of workers and a more specific defense of the choice of "disruptive potential" as the critical dimension of that power in postindustrial societies. I then examine various empirical indicators of disruptive potential that have been used in the literature and propose a new measure based on the input-output tables of economic interdependencies. This will be followed by a general overview of the empirical objectives of the research project as a whole and by a brief technical discussion of the measures and procedures used in the analysis. Finally, I will present and discuss the initial results of the statistical analysis and, in a concluding section, summarize the core findings and offer some general conclusions.

WHY STUDY STRUCTURAL POWER OF WORKERS?

In discussions of the capitalist class it has become commonplace to argue that the power of the bourgeoisie cannot be assessed simply in terms of overt actions of individuals or even groups of capitalists. Their power is based on their structural location within the system of production. But when the working class is studied, the concept of power is usually reduced to a much more instrumental, behavioral concept, to be measured primarily in terms of the behaviors it is meant to explain. What is lacking is a rigorous notion of structural or positional power. Such a notion is, however, essential for the analysis of industrial conflicts. Below, I will argue, first, that the prevailing practice in studies of union behavior by measuring power by its effects (strikes, wages, and so on) generates serious conceptual problems that can only be resolved by developing a proper concept of structural power. Second, I will argue that in the context of postindustrial society, an appropriate way of approaching the problem of structural power is in terms of the "disruptive potential" of workers since increasingly such potential is at the heart of the effectiveness of unions.

The Conflation of Power and Its Effects

The literature on industrial conflict has presented the terms *power* and *strikes* as symbiotically connected. In the causal loop connecting the two terms, some authors emphasize the power ⟶ strike behavior path. Here the strike is seen as an "opportunity": strikes are a way of translating market power into economic results. Thus, the more power a group of workers has in the market, the greater will be the tendency to strike.[1] Others have emphasized the inverse causal path: strike behavior ⟶ power (that is, the achievement of more economic and status resources). Here the strike is seen as a grievance-resolving strategy: groups get a larger share of economic and normative benefits because they strike.[2]

Aside from the emphasis on one or the other half of this causal loop, the conceptual equation between power and strike behavior has consolidated in the common practice of using strikes as a proxy indicator to measure or "operationalize" power.[3] This creates serious theoretical problems. If a given, observed behavior is employed as an indicator of a causally prior and more general power dimension, the still problematic relationship between a cause and its effects is transformed from an empirical hypothesis into a definitional identity.[4]

This operational short-circuit has a number of damaging consequences. First, it makes it impossible to distinguish between effects of the *possession* of power and effects of the *exercise* of power. It could happen, for example, that a group of workers would be powerful enough in terms of their structural position that they would not need to strike (exercise their power) in order to accomplish their goals.[5] Second, the conflation of possession and exercise of power make it difficult to study the defensive successes of unions as opposed to simply their offensive successes. Perhaps, for example, the crucial effect of union power is to block wage-cuts during economic turndowns rather than to win wage gains during periods of expansion, and the actual exercise of union power, especially in the form of strikes, is more likely to be for wage gains. As the economist M. W. Reder pointed out some twenty years ago in his discussion on the wage-raising power of unions, external indicators of poor performance of unions (wages, employment, strikes) may hide a real mobilization in adverse market conditions. "As demands for wage cuts occur mainly when there is unemployment of [union] members, this means that when unions appear to be doing badly, the unions may well be exercising more economic power over wage rates than when the members are prospering."[6] To empirically examine this, it is essential to have a way of measuring such "economic power" that is independent of its consequences (whether strikes or wage rates). Third, and perhaps most important, the operational short-circuit forecloses the possibility of discovering that the outcomes attributed to power are in fact not the result of power at all, but of some other process. Strikes may reflect organizational imperatives rather than power positions; wage rates may be entirely the result of supply-and-demand conditions in the labor market. Unless we have a measure of union power independent of these consequences we will be unable to test the basic theoretical claims of our models.

The first aim of this paper is thus to provide a coherent measure of the structural power of workers. One could imagine a variety of strategies for developing such measures. We could focus on the factors that give unions organizational resources of various sorts. Or, perhaps, we could argue that the structural power of unions as collectivities of workers is derived from the aggregation of the individual market power of their members, and thus such things as educational and skill levels of workers could constitute measures of union structural power.

I will argue, however, that a measure of the "disruptive potential" of workers derived from their position within the hierarchy of the system of economic interdependencies is the most appropriate way of tapping structural power. Such a power dimension, with the differential disruptive potential associated with it, is very akin to the Ricardian notions of positional rent with differential returns and hence will be referred to as "positional power" throughout this discussion.[7] Let us now briefly examine the way such disruptive potential has been discussed in the literature of industrial relations and why it is an appropriate measure of structural power in contemporary circumstances.

Disruptive Potential and Postindustrial Strikes

Social scientists have long acknowledged the existence of a "negative" power (*A* is able to prevent *B* from acts or resources) along with a more commonsensical "positive" power (*A* is able to get acts or resources from *B*).[8] An obvious example is given by the bidimensionality of labor unions' power in the market: "positive" on wages, "negative" on profits, market shares, and so on. As Reder writes, "there are . . . dimensions of union power, other than the capacity to raise members' wage rates, which are of concern to students of labor problems. The amount of financial injury, including foregone profits, that a union can impose upon an employer is often an excellent indicator of what it can compel him to do."[9] Such a negative dimension is not the simple inverse of the positive, as is implied by the zero-sum metaphor sometimes naively applied to wage boom-profit squeeze conjunctures. Negative power has its own autonomy, visible both conceptually (see the "negative sum game" metaphor, where both parties lose, recently applied to strikes by G. Sartori)[10] and empirically (see the lack of consistent statistical covariation between wage increases and profit losses).[11] As a recent study on class and power strategies puts it, "a distinction should be made between the ability to command resources on the basis of skill and market scarcity, and the ability to command resources on the basis of 'disruptive potential.' Since the two sources of industrial leverage vary independently, any given group's total bargaining power should be determined by its rating on both these counts."[12]

Recent sociological analyses of the emerging patterns of stratification have found in the above negative capacity, which stems from a strategic position in the flow of goods and services, the newest and most effective power leverage of certain groups of workers.[13] This kind of power leverage has also been identified as one of the decisive features of the "postindustrial" type of strike, the distinguishing trait of which lies not so much in its greater militancy (higher duration, or frequency, or participation, or violence) as in the structural interdependence in the actors' system. B. C. Roberts describes this situation as follows: "Under conditions of advanced technology, involving high capital-labor ratios, low levels of intermediate stocks, and even more closely integrated production and distributive processes, the balance of bargaining power has tipped in favour of groups who are prepared to exploit this strategic situation . . . Hence, the really critical question is can society stand the strain of the extension of uninhibited collective bargaining."[14] And, as Finer observes, this "strategic situation" consists primarily of disruptive potential: "The power of organized labor does not rest in its possession of the means of coercion . . . Nor does it consist in numerical superiority . . . Nor, for that matter, does it inhere in the organized labor as a whole, but in certain small, specified groups within it. The power resides not in acts of commission but in acts of omission: in the ability of these special groups to withhold certain services which are, today, critical to the survival of society." [15]

Interdependence relationships allow quantitatively restricted groups to interrupt productive processes and services far beyond the group's immediate job concern. This is the structural precondition for the "surplus damage"—economic or social injury disproportionate to the subjective cost of undertaking it—that makes the strike "political."[16] The effectiveness of a strike thus depends not simply on the pressures immediately brought to bear on the employer by the striking workers but on the extent to which other key actors in the society—the state, other capitalists, the media, political parties—apply pressure because of systemic disruption.

This implies a new approach to collective action. If the arena of conflict is highly interdependent, the mobilization of large masses of workers may no longer be necessary. On the contrary, the typical development of late industrial societies (involving, on one hand, increased growth of the tertiary sectors and of welfare services, and, on the other hand, increased specialization, division of labor, and interdependence among productive processes) seems to endow unprecedented potentials for disruption upon workers as a small group (or, as it is often said, as a "corporate" group), be they shop-floor workers, technicians, or municipal employees.[17] These general developments, rather than those particularistic historical syndromes usually employed to explain "the Italian case," seem to help reproduce a number of social processes, not only in Italy but in all advanced industrial countries: fragmentation of the "Big Labor" unions into "autonomous" groupings endowed with an exclusively positional advantage; overload by sectoral demands; normative and redistributive "jungles" stemming from the uneven distribution of bargaining power; and, in sum, all of those centrifugal and particularistic pushes often gathered under the general rubric "corporatism."[18]

APPROACHES TO MEASURING "DISRUPTIVE POTENTIAL"

As should be clear, this research project is not the first to recognize the importance of disruptive potential for an analysis of strikes. Earlier research, however, has failed to develop a satisfactory strategy for measuring this potential. In general the approach has been to use some kind of generic notion of such disruptive potential that relies heavily on actual strike data for its measurement. Official statistics (ISTAT and Labor Ministry for Italy, and national census bureaus and I. L. O. for cross-country comparisons) provide three standard measures of industrial conflict: *frequency* (number of conflict events), *size* (number of participants), and *duration* (number of work-days or work-hours lost). The latter measure has often been adopted as an indicator of the over-all damage of strikes, either by itself or in multiplicative variants (for example, person-days lost).[19] A more sophisticated version of this indicator is given by the multiplicative combination of frequency, size, and duration so as to provide a quantity akin to the physical concept of volume and, therefore, to the over-all impact of conflict.[20]

This strategy of multiple indicators makes a merit of the multidimensional treatment of such complex phenomena as the industrial strike action, in contrast to the simplistic usage of one single measure of conflict, usually frequency, so often found in economic analyses.[21] In fact, keeping constant the number of strike events, the number of participants, and even the conflict's over-all volume, the mean duration may change. This would imply, under seemingly uniform statistics, very different models of industrial relations, union tactics, and economic impact.[22]

In spite of the above merits, this approach to measuring disruption has two major flaws. First, in a manner parallel to our previous general discussion of power and its effects, the use of strike "volume" as a measure of disruption collapses the potential for disruption into a measure of actual disruptive behavior. To the extent that the two concepts are not isomorphic, this seriously erodes the usefulness of the concept. Second, as was pointed out some fifteen years ago in K. G. J. C. Knowles's pioneering studies, all such generic measures of disruption based on strike data treat the economic system within which the strikes occur as amorphous and undifferentiated. The economy is assumed to suffer the same amount of disruption from a given quantity of person -days lost (or similar measures), irrespective of the variable position of such a quantity of conflict in the different sectors of the productive system. These sectors, each with a different coefficient of productivity and exchange in goods and services, are interdependent with each other in relationships that are asymmetrical and hierarchical. Thus, as Knowles stated it, "accepting the number of man-days lost as an indicator of economic damage [is] like taking total bomb-tonnage dropped as an indicator of air-raid damage; irrespective of target or type of bomb."[23] The relevance of these positional differences is confirmed *ex contrario* by the current management practice of "suspending" all the productive units "downstream" of the striking unit, and of reporting the whole production stream as "on strike"—an attempt to match the cumulative damage due to interdependence with a likewise cumulative savings on labor costs. [24]

The most exact representation of the interdependence of industrial sectors in an industrial system is given by the Central Bureau of Statistics in the so-called input-output tables (or Leontief matrices or economic-transactions matrices), now available in standard formats (16 x 16, 33 x 33, and so on) for most industrial countries and regional subunits.[25] These tables consist of a square matrix of the industrial sectors of the economy, both as supplying (rows) and receiving (columns) units, as shown in table 1.

		Receiving Industrial Sectors			
		X_1	X_2	X_3	etc.
	X_1	a_{11}	a_{12}	a_{13}	etc.
Supplying Industrial Sectors	X_2	a_{21}	a_{22}	a_{23}	etc.
	X_3	a_{31}	a_{32}	a_{33}	etc.
	etc.	etc.	etc.	etc.	etc.

Table 1. Format of Input-Output Table

If X_1 is the total product of industry 1, part of this product will serve as final consumption and part as means of production to other industries. Thus, the term a_{ij} represents the amount of output from industry i supplied to industry j, either in terms of physical quantities ("technical coefficients") or monetary flows (as invoiced). The row frequencies in i can be understood as a measure of technical dependence of each industry (and of the final market) on inputs provided by industry i and therefore as a proxy for the "positional power" of i in the system.

Below, I will propose a simple way of deriving an ordinal measure of positional power from such input-output tables. But first I will briefly outline the more concrete empirical objectives for which this variable will be used.

CORE EMPIRICAL OBJECTIVES OF THE RESEARCH

To summarize the argument so far: In order to emprically investigate the determinants of strike behavior, it is essential to develop a concept of structural or positional power of workers that is analytically independent of its effects. For postindustrial societies, the disruptive potential of workers derived from their position within the system of economic interdependencies is likely to be a particularly important aspect of such structural power.

The actual patterns of strike behavior, of course, are not simply the effects of positional-power distribution across industries. A fully developed theory of industrial conflict would have to examine how such structurally defined disruptive potential interacted with various other determinants of strikes and strike outcomes such as organizational resources, ideological dispositions, institutional forms of state apparatuses, and working-class fragmentation within industrial sectors. For example, the extent to which a given amount of disruptive potential could be translated into effective pressure on employers during a strike would probably depend in part on the ways in which the state intervened in such conflicts and in part on the organizational strength of the labor movement. Where the labor movement was weak and state intervention directed toward the immediate interests of the capitalist class, strikes with high disruptive potentials are likely to be met with repressive responses by the state. Far from increasing the effective power of workers, such sensitive or pivotal positions might give them even less room to maneuver in the use of the strike weapon.

These are important issues, but they will be largely ignored in the present analysis. Our first task, before including the complicated interactions of postional power with other factors, is to establish the empirical importance of positional power itself. This will be the core preoccupation of the present research. However, it will help to situate the results presented here to sketch out the broader agenda of the project as a whole.

Strikes and the Economic Market: Diffusion versus Polarization of Power

To begin with, this research will show the distribution of workers' positional power rank-ordered across industrial sectors. These data will then be used to explore two important problems in the economic marketplace of strikes: the historical transformations of the positional-power distribution within the working class and the relationship of strike activity to business cycles.

The existing literature on the transformations of the Italian economy contain two contradictory images of its development with respect to distribution of power. On one hand, "dual economy" analyses, studies of the J-shaped distribution of technological development in the Italian industrial structure, and similar research have suggested an increasingly polarized industrial structure with a widening gap in the power of workers in the stronger and in the weaker industrial groups.[26] On the other hand, research demonstrating the diminishing differentials in cross-industrial wages[27] or even the contribution of different industrial sectors to the total quantity of industrial strikes[28] suggests a growing diffusion or homogenization of positional power among workers. By examining longitudinal correlations over input-output tables in a vintage time-series we will be able to see which of these general images seems most accurate for the postwar trends in the Italian economy.

A second research issue is the vexed question of the relationship between strike activity and business cycle. Most studies have reported a positive correlation, due to the workers' heightened bargaining power in cyclical upswings. However, notable exceptions (negative correlations) have been observed for particular places and particular time periods.[29] Even authors who acknowledged an over-all positive correlation had to stress that this correlation depended on the specific measure of strikes employed (in other words, the correlation was positive for various measures of strike frequency, but weak or even negative for measures of size) and that it was systematically lowered when trend factors were introduced into the regression equations.[30] In the Italian case the correlation between business cycle and strikes is particularly complex: it was weak for the period 1952-58, strong for the period 1959-67, and almost zero from 1968 on.[31]

The explanations for the above fluctuations have been blurred by the routine use of undifferentiated statistical aggregates in calculating strike rates and by the underlying abstract assumption of the working class as the "classe generale." They thus ignore the variable dependence on the business cycle of different groups (industries) of workers, as shown by the now ubiquitous literature on labor-market segmentation, and the variation in the degree of positional (and disruptive) power. We will try to decipher the patterns of these fluctuations for the Italian case by examining the interactions between positional power and business cycles in the determination of strike activity.

Strikes and the Political Marketplace

Positional-power measures can be employed not only for assessing the polarized versus diffuse effects of the economic cycle, but also for understanding the growing "poliicization" of strikes, in other words, their strategic position in the political-exchange arena and their "political-exchange rate." Strikes are often now conceptualized not only as an economic test of strength with the employer, whether single or collective, but as a resource to spend in a political marketplace where the major interlocutor is the state.[32] The development of strikes from economic bargaining to political means of exchange is most notably indicated by the emergence of what we may call the "externalities" of the strike action. Pizzorno expresses this issue as follows:

> In addition to direct effects on bargaining (wage increases, work rules, etc.) such action may have secondary ones analogous to the external economies of decisions taken in the markets of ordinary goods: a demonstration which brings urban traffic to a halt, a strike which harms users of a public service, a union strategy which has an impact on electoral results. In the conditions of increasing interdependence of a modern industrial society such secondary effects are becoming increasingly frequent. As many observers have stressed, the nature of the industrial action itself has been affected by the awareness that these effects have become important: industrial action becomes more a demonstration than a blow directed to the opponent. For instance, modern strikes, shorter but mass-participated, are more meant to influence "third parties" (State or public opinion) than to knock down the industrial adversary.[33]

Given this functional differentiation of the strike as an economic and as a political weapon, measure of positional power using input-output tables that represent explicitly economic-market transactions are also useful in analyzing political exchange. For one, positional power can be used as an indicator of the "political multiplier" implicit in any strike action. The effects of a strike move from the economic to the political realm when the gains cannot be ascribed to any strike market power, in other words, when the threat to suspend work ceases to simply be a local threat to profits and becomes a general threat to the so–called social order or system. As discussed above, the most important structural condition for such a political transformation of industrial conflict seems to rest not so much on the "mass" character of strikes[34] as on the interdependence relationships that entangle the whole system in any single bargaining issue or grievance and that serve as the implicit multiplier of the strike impact while minimizing the individual (or sectoral) costs of the strike action to the strikers.[35] Input-output tables (properly adjusted for the "defective" cases of public administration and other service industries, the output of which is hardly amenable to the physical quantities required by the technical coefficients of the matrix) are the best official representation of interdependence relationships not only between one sector and another, but between one sector and the whole system. It is for this reason that variables of positional power constructed from such matrices can function as plausible indicators of the "political multipliers" of strikes.

Positional-power measures can also be used to assess the latent political strategies in the patterns of union activity. If we stretch the monetary metaphor implicit in the term *political marketplace*, we can conceptualize the above "political multiplier" as the exchange rate in the expenditure of the "conflict currency." Determining the exchange rate—in other words, how much conflict has to be spent by one group compared to others in order to achieve the same output of disruption or stress on the system—will provide us with a first test and empirical balance sheet of the two alternative approaches labor-union leadership may follow in allocating conflict expenditures (person-days of strikes or the like) through the system: the compensatory approach (more conflict where the exchange rate is low) and the dualistic approach (more conflict where the exchange rate is high). The correlation of different groups' exchange rates with their actual strike frequencies will allow the empirical assessment of so volatile and yet crucial an issue as the "rational" versus the "inflationary" nature of the strike decision.

The Empirical Focus of This Paper

Most of the research agenda outlined above will not be explored in this paper. Our objectives here are mainly concerned with developing and validating a preliminary measure of positional power. Specifically, we will do the following:

1. Present a simple strategy for operationalizing in nonmetric (in other words, ordinal) form a variable tapping positional power.
2. Empirically examine the relationship between this variable and interindustry wage differentials as a way of provisionally validating the measure. This exercise will be done both for the simple correlation between positional power and wages and for more complicated multivariate models in which various controls are included.
3. Examine the relationship between positional power and various measures of actual strike activity.
4. Examine the joint effects of positional power and strikes on interindustry wage differentials.

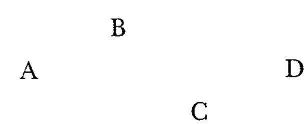
USING INPUT-OUTPUT TABLES TO MEASURE POSITIONAL POWER

Our positional power hypothesis implies that if group *A* requires physical inputs or services produced by group *B*, but group *B* requires no inputs from *A*, the same quantity of conflict in the two groups will have different weights: a weight of, say, 100 in *A* but 100 + *n* in *B*, where *n* is a term proportional to the fraction of *B*'s product required by *A*. The problem to solve is the determination of the *n* term, in other words, the measure of positional power that indicates how much disruption would potentially occur if production would cease in group *B* because of a strike.

The ideal measure of this concept would consist of a continuous metric that captured the full range of disruptive potential in the interchanges represented in the input-output table. As a first approximation we will adopt a simpler strategy that generates an ordinal measure of the disruptive potential of sectors. The procedure involves simplifying the input-output table by the use of "oriented graphs."

An example with a 4 x 4 system and 0-1 values in the table (absent -present) will clarify the operational logic. Let us assume a simplified system consisting of four productive groups *A, B, C, D* with the following interdependence relationships: *A* produces goods or services that are a necessary input for *D* but requires production inputs from *B*, which in turn is fed by *C*. *D* only produces goods for the final consumption market. Matrix 1 represents these transactions with dichotomous, 0-1 values. The associated graph gives an even more explicit representation of the hierarchical structure of the exchanges, as it shows not only the direct, but also the indirect, dependence flows, in other words, the rank order of positional power and disruptive effects: *C*'s strike hits to some extent the entire system whereas the same person-days of strike in *D* are a local event confined to that group.

		Receiving Groups			
		A	B	C	D
Supplying Groups	A	0	0	0	1
	B	1	0	0	0
	C	0	1	0	0
	D	0	0	0	0



Matrix 1

Input-Output Matrix (adjacency matrix of direct effects) and Associated Graph

The positional hierarchy in the system is fully represented in matrix 2, which describes which group is affected by another group *directly or indirectly*. An indirect effect is one in which an input is not directly used in the production of a commodity but is used in the production of that commodity's own immediate outputs. These indirect inputs will be referred to as "dependence rebounds." Thus, in our example, while *C* only directly supplies inputs to the production of *B*, its total number of dependence rebounds is three. The "reachability matrix" represented in matrix 2 can be obtained intuitively from the above graph or mechanically from successive multiplications of matrix 1 by itself. [36]

		Receiving Groups				Total Outdegrees	Rank
		A	B	C	D		
Supplying Groups	A	0	0	0	1	1	2
	B	1	0	0	1	2	3
	C	1	1	0	1	3	4
	D	0	0	0	0	0	1

Matrix 2
Reachability Matrix Derived from Matrix 1

The number of paths (or dependence rebounds) departing from one group to others (outdegrees) is given by the East (row) marginals and can be assumed as a hierarchical index of positional power of that group. Thus, in our example, sector *D* has no outdegrees since it supplies no products to any other sector and thus has the lowest rank, whereas *C* supplies goods to all three other sectors giving it a total of three outdegrees (one direct plus two indirect) and the highest rank. (A parallel concept–indegrees–can be calculated as an index of dependence by adding up the entires in the columns of matrix 2 rather than the rows.)

This method was applied to the financial flow version of the 1974, 16 x 16 input-output table for Italy. These flows were calculated in terms of the financial flows per capita in the supplying sector (in other words, the total flow in each case was divided by the number of employees in the sending sector). This standardization was used because it more directly represents the effects of strikes in terms of person-days of work lost. This data was used to construct two measures of positional power: direct *disruptive potential*, measured by the outdegrees in the original matrix, and *total disruptive potential*, measured by the outdegrees of the reachability matrix. Table 2 shows the per capita financial flows in the 1974 input-output table, and table 3 presents the associated reachability matrix with direct and indirect outdegrees.

In order to construct this simple reachability matrix, the data in the original matrix had to be transformed into one containing only 0's and 1's in the cells. That is, some threshold value of financial flow had to be adopted to define the dichotomy of a present or absent effect. The most appropriate threshold would be one that allowed for the maximum range of outdegree values, in our case from 0 to 15. A level of 500,000 lira per employee accomplishes this. Thus, to have a direct outdegree, a sector must directly supply another sector with at least 500,000 lira per employee; to have an indirect outdegree it must indirectly supply that amount via its flows to other sectors.

Other Variables

A number of other variables will be used in various stages of the analysis. They are measured as follows:

Strikes: The strike variable is measured as *person-hours lost due to strikes*. This data is provided by two ISTAT yearbooks (*Annuario Statistiche del Lavoro* and the *Annuario Statistico Italiano*). However, the industrial breakdown is not in full conformity with the NACE-CLIO European Standard Classification adopted since 1970 in the economic interdependency tables. For example, the "metallurgico e meccanico" category of strikers in the Annuari tables includes metal-mechanical products, means of transportation, and partly minerals and metals (iron and non), which are categories 6, 7, and 3 of the interdependency table. We have thus had to make some estimations. We have reaggregated the data on strikes on the assumption that the distribution of strike-hours across the NACE-CLIO classes was done with the more detailed breakdown adopted in the yearly ISTAT paper, "Il prodotto lordo w gli investimento nelle imprese industriali," which provides the subclasses making up the NACE-CLIO classes (for firms with twenty or more employees.)

Wages: Wages will be calculated as the total wage and salary bill in a sector, divided by the number of employees. Wages of managers and executives will thus also be included in the interindustry wage analysis.

Productivity: Productivity will be measured both on an industry's total product (value of the total product divided by the number of workers) and on the share of the industry's total product supplied to the other industries as means of production or other "intermediate goods" before the downstream market of final consumption.

Other Economic Control Variables: Several other economic variables will be used as controls in some of the regression equations. The *variation in the industry's employment since 1970* (the difference between 1974 employment and 1970 employment, divided by 1970 employment) will be used as a rough indicator of labor market elasticity. This provides an interindustrial proxy for the more routinely used sectoral unemployment, a variable that has an ambiguous meaning (since the unemployed are not constrained generally to seek employment in the sector form from which they lost their last job) and an even worse measurement. The *total employed labor* will be used as a kind of "political weight" for the 16 x 16 sectoral table. The rationale, as Pizzorno has argued, is that industries with high numbers of employees are, by sheer force of numbers, likely to carry more political weight than industries with fewer employees.[37] Finally, *total production* will be used as a scale factor indicator of total "economic weight of a sector."

ANALYSIS

I will present and discuss the results in the following order. First, I will attempt to provide a limited validation of the use of total outdegrees from the reachability matrix as a measure of positional power by examining the relationship between this variable and average wages across industries. Second, I will examine the effects of positional power on strikes. Finally, I will examine the joint effects of strikes and positional power on wages.

Validating the Measure of Positional Power

In order to check the validity of outdegrees as a measure of positional advantage, I used them in regression equations predicting the most obvious "external validation" criterion for power, wages, as the dependent variable. The explanatory power of outdegrees was then compared to a more conventional predictor of interindustry wage differentials, productivity.[38] After repeated experiments with various transformations of the data in view of the poor metricity of the outdegrees variable and the dubious linearity of the relationships being investigated, logarithmic transformations of the independent variables were adopted. The results appear in table 4. As the purpose of these regression equations is validation rather than apportionment of causal effects, we are less interested in the magnitude of the regression coefficients than in their statistical significance and in the over-all fit of the equations. Our focus, therefore, is on the significance levels of the F-ratios and on the measures of explained variance (adjusted R^2) in wages as the criterion-variable for power.

According to these measures, the outdegrees alone, as ordinal, and thus as a "weaker," indicator of positional power, explain almost 50

Table 2. Matrix of Financial Flows among Economic Sectors per Employee (in thousands of lira)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Agriculture, Forestry and Fishery	642	0	0	3	13	0	0	1453	5	28	1	61	3	0	20	18
2. Production of Energy	1394	5661	3861	3086	6236	2933	698	1947	1193	2134	1256	6329	5019	151	2928	1586
3. Metallic Minerals	36	20	2529	293	311	11474	2761	231	0	392	3223	322	29	0	0	110
4. Non-Metallic Minerals (mining and products)	29	37	225	1128	232	126	164	210	9	137	5849	63	15	0	21	51
5. Chemical and Pharmaceutic Products	1292	207	393	418	7127	514	243	541	2318	2991	656	580	60	17	1114	243
6. Non-transportation machinery and equipment	11	136	23	62	44	1870	718	90	33	92	523	367	120	5	35	206
7. Transportation equipment	32	0	0	0	0	0	642	0	0	0	0	958	294	0	10	751
8. Food, Beverages and Tobacco	1714	6	0	0	198	0	0	3546	112	26	0	2348	35	0	220	116
9. Textiles, Apparel, Leather Goods and Footwear	16	0	1	1	9	12	15	10	2641	135	23	79	23	1	24	20
10. Wood, Paper, Rubber & Similar Products	25	36	22	137	326	620	471	343	248	2370	665	813	216	81	361	265

11. Construction & Public Works	3	62	13	18	33	34	11	12	14	21	11	147	134	13	378	277
12. Hotels, Wholesale & Retail Trade & Miscellaneous	117	23	62	48	69	160	43	143	153	115	120	373	141	15	127	69
13. Transportation & Communication Services	69	109	233	160	243	449	151	281	174	235	397	699	658	91	130	168
14. Financial Services and Insurance	466	62	99	169	312	562	94	364	425	531	653	1125	432	16968	765	503
15. Real Estate & Related Services	39	41	33	38	281	260	100	116	118	228	171	768	161	544	634	680
16. Public Administration, Non-profit Private Services and Other Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51

Source: Computations on the Intersectoral Table of the Italian Economy for the year 1974, ISTAM, Supplemento al Bollettino Mensile di Statistica, 1979.

Table 3. Reachability Matrix with Associated Direct and Total Outdegrees

INPUT SECTORS	OUTPUT SECTOR (See Table 2 for names of sectors) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Direct Out-degrees	Total Out-degrees
1.	x							D				I					1	2
2.	D	x	D	D	D	D	D	D	D	D	D	D	D	I	D	D	14	15
3.			x			D	D				D	I				I	3	5
4.				x							D						1	1
5.	D				x	D	I	D	D	D	D	D		I	D	I	8	11
6.						x	D				D	I				I	2	4
7.							x					D				D	2	2
8.	D							x				D					2	2
9.									x								0	0
10.						D	I			x	D	D					3	4
11.																	0	0
12.												x					0	0
13.						I	I				I	D	x			I	4	5
14.						D	I			D	D	I		x	D	D	5	7
15.						I	I			I	I	D		D	x	D	3	7
16.																	0	0

D = Direct Outdegree

I = Indirect Outdegree

x = Loops of the sector on itself

Criterion for presence of a flow = Domestic production per employee 500,000 or more Lire.

Data derived from the input-output Matrix in Table 2.

Table 4. Average Wages in Industrial Sectors Regressed on Positional Power and Productivity

Dependent Variable = Average Wages in Industrial Sectors (n = 16)

	Independent Variables in Regression				
		Productivity Measures Based On:			
	Positional Power[a]	Total Product[b]	Intermediate Product[c]	R^2	Adj. R^2
Beta (F)	.69*** (12.6)			.47	.44
Beta (F)	.67* (5.7)	.04 (0.2)		.49	.41
Beta (F)	.80** (8.5)		−.15 (0.3)	.50	.43

Significance levels (two tailed tests): * $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

[a] Positional power is measured as the log of total outdegrees from the reachability matrix in Table 3.

[b] Log of total product/number of employees.

[c] Log of intermediate product/number of employees.

percent of the total variance in wage levels. Adding the productivity measures to the equation only marginally increases the raw R^2 and has no effect at all on the adjusted R^2 (in other words, the R^2 adjusted for the degrees of freedom in the equation). Furthermore, the total outdegrees variable always has highly significant coefficients, whereas the productivity coefficients are insignificant. On this basis it seems reasonable to assume that our crude variable, total outdegrees, is a plausible measure of positional power.

Positional Power and Strikes

Let us now turn to the central question: the relationship between positional power and strike activity.

Table 5 presents the basic results for the regressions of positional power on strikes (person-hours lost due to strikes) with and without the various economic control variables described earlier. The data show a surprisingly low correlation between strikes and positional power, and no statistical significance for the coefficients. Different transformations of the outdegrees variable had no effect on this low correlation, and the addition of the economic control variable also had no effect.

On the basis of these results, then, it appears that while positional power has a systematic and strong effect on wages, it does not directly affect the level of strike activity. This may, of course, be the result of data and measurement problems. It is possible that with a more sophisticated measure of positional power, one that generated a continuous metric of the degree of disruptive potential, a positive correlation could be demonstrated. More plausibly, the strike measure used in the regression would reduce the measured effect. Strike data were gathered for only a single year, and it is likely that in such a short time period more or less random fluctuations are likely to be fairly important, particularly for a regression with such a small number of cases ($n = 16$). A strike measure based on some sort of weighted average over a five-year period would probably be a more systematic variable and might have yielded stronger results. The construction of such variables, however, must await future research. For the moment, I will assume that the results are not mainly consequences of such measurement or data problems, but reflect the strengths of the real relations we are investigating. The task, then, is to try to explain these findings. An examination of the joint effect of strikes and positional power on wages will help us to unravel this puzzle.

Table 5. Person-Hours of Strikes Regressed on Positional Power and Sectoral Economic Variables

Dependent Variable = Person-Hours of Work Lost in Strikes

Independent Variables in the Regression Equations

	Measures of Positional Power: logTOD[a]	TOD[b]	DOD[c]	Variation in Labor Force, 1970-1974[d]	Labor Force in 1974	Total Production	R^2	Adjusted R^2
Beta	.39						.15	.10
(F)	(2.6)							
Beta		.29					.08	.02
(F)		(1.3)						
Beta		.71	−.43				.10	.00
(F)		(0.4)	(0.1)					
Beta		−.07		.20	−.40	−.07	.23	.00

All coefficients insignificant at the p .05 level.

[a] Log of total outdegrees in reachability matrix in table 3.

[b] Total outdegrees.

[c] Direct outdegrees.

[d] (1974 labor force–1970 labor force) / (1970 labor force).

Table 6. Average Wages in Industrial Sectors Regressed on Positional Power, Strikes, Productivity and Economic Control Variables

Dependent Variable = Average Wages in Industrial Sectors (N = 16)

Independent Variables in the Regression Equations

	Positional Power[a]	Strikes[b]	Productivity[c]	Variation in Labor Force[d]	Labor Force	R^2	Adjusted R^2
Beta	.69***					.47	.44
(F)	(12.6)						
Beta		.05				.00	.00
(F)		(.03)					
Beta	.82***	–.29[e]				.57	.50
(F)	(16.6)	(3.1)					
Beta	.96***	–.38*	–.10			.61	.51
(F)	(12.9)	(3.4)	(0.1)				
Beta	.65**	–.35*		.40*		.70	.63
(F)	(8.9)	(3.7)		(4.1)			
Beta	.68**	–.45**			–.34	.66	.58
(F)	(7.9)	(5.2)			(1.9)		
Beta	.45*	–.40**		.38*	–.32	.76	.67
(F)	(3.5)	(5.3)		(4.3)	(2.2)		
Beta	.54*	–.47**	–.22[e]	.38*	–.46	.77	.67
(F)	(4.0)	(5.7)	(0.6)	(4.3)	(2.6)		

Significance levels: * p .05
** p .01
*** p .001

[a]Positional power is measured as the log of the total outdegrees in the reachability matrix in Table 3.

[b]Strikes are measured as person-hours of work lost in strikes.

[c]Productivity is measured as the log of the intermediate product per worker.

[d]Variation in labor force = (1974 employment–1970 employment)/(1970 employment).

[e]In this equation this variable is taken in the natural (raw) rather than the logged form, because the natural score yields higher significance levels in the coefficients of the other variables.

Positional Power, Strikes, and Wages

Table 6 presents a series of regressions predicting wages with positional power, strikes, productivity, and two of the economic control variables as independent variables. Several aspects of these results are important to note. First, the positional-power variable is strong and significant in every equation. Its value is not substantially affected by the presence of the strike variable in the equation or the other economic controls.

Second, while the zero-order relationship between strikes and wages is low and insignificant, the association becomes statistically significant when the power variable is added.

Third, the sign of the coefficient for the strike variable is negative, not positive, in the equations that contain the power variable. This means that once we control for positional power, strikes and wages are inversely related. The most likely interpretation of this result is that for a given level of positional power, strikes are more likely to occur when wages are low. That is, the causal direction is in the opposite direction from the one represented in these equations; low wages cause strikes rather than strikes causing (relatively) low wages (controlling for levels of power).

Fourth, some statistical signals in these results indicate that the positional power variable should be treated as a multiplicative or interactive variable rather than simply as an additive one. The first multiplicative symptom is implicit in the log transformations used in the equations, since the additive combination of logged variables, $\log A + \log B + \log C$, in our equations is but the linearization of the multiplicative combination of the raw variables, $A \times B \times C$. The second signal of possible interactions between the positional power and the other variables is that the partial coefficients for the outdegrees variable not only do not drop when the other variables are added, but are even higher than the zero-order correlation in two of the equations. These multiplicative possibilities will be explored in future work.

CONCLUSION

The basic findings of the research so far can be summed up as follows:

A high correlation between positional power and wages which thus provides some validation of the proposed measure.

A noncorrelation between positional power and strikes, indicating that the likelihood of engaging in strike action does not vary with the disruptive potential of that action.

A noncorrelation between strikes and wages.

A systematic negative correlation between strikes and wages when the level of positional power is held constant, indicating that at any given level of positional power, strikes are more likely to occur when wages are low.

Overall, then, the results indicate that groups seem to be able to secure high wages on sheer positional grounds, with little or no necessity to resort to strike action. This finding contradicts the expectations of the literature discussed above, that power and strike behavior are two faces of the same coin (or, in a more limited way, that strikes are a good measure of power). Instead we are brought back to the more unobtrusive and implicit realm of the "power of power," where, as Fox puts it, "it is precisely in the power relationships where power disparity is greatest that its active exercise is least necessary."[39] Even in so strike prone a country as Italy, "reserve power" seems to be a far more important resource in bargaining situations and exchange than strike power or than any other form of overt exercise of power.

NOTES

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1. For the classical statements on strike frequency and business cycles, see: A. Rees, "Industrial Conflict and Business Fluctuations," *Journal of Political Economy* 60 (1962): 371-82 (revised in *Industrial Conflict*, ed. A. Kornhauser [New York: McGraw Hill, 1954]); O. Ashenfelter and G. E. Johnson, "Bargaining Theory, Trade Unions and Strike Activity," *American Economic Review* 59 (1969): pp 35-49; and, referred to as a somewhat more "political" secular cycle, E. Shorter and C. Tilly, *Strikes in France 1830-1968* (Cambridge: Cambridge University Press, 1974).

2. See, among others, on the post-68 strike and wage boom: G. L. Perry, "Determinants of Wage Inflation," in *Brookings Papers of Economic Activity*, 1975, n. 2; D. A. Hibbs, "Industrial Conflict in Advanced Industrial Societies," *American Political Science Review* 70 (1976): 1032-58; D. Soskice, "Industrial Relations Systems in Western Societies," in *The Resurgence of Class Conflict in Western Europe Since 1968*, ed. C. Crouch and A. Pizzorno (London: Macmillan, 1977); and for the Italian Case, M. Paci, *Mercato del lavoro e classi sociali in Italia* (Bologna: Mulino 1973), pp. 207-32.

APPENDIX

Data Set From the 1974 Input-Output Table for
the Italian Economy (ISTAT 1979): 16 x 16 Industries

	W	S*	PB	PC	PE	L	L1	DOD	IOD	DID	IID	L7
01	2137	9715	7296	4959	749	11890	12117	02	01	04	00	12049
02	843	2070	8309	5355	1538	1750	1689	15	01	01	00	1712
03	882	6659	5988	1285	1161	2701	2532	04	02	02	00	2354
04	952	2463	3439	1112	690	3759	3692	02	00	02	00	3842
05	1148	7116	5741	3622	2279	2979	2854	09	09	03	02	2730
06	3432	28233	5680	12070	2276	12393	11732	03	02	07	01	1732
07	1181	10604	1015	5484	1951	3721	3653	03	00	05	04	3278
08	1092	4928	3915	12190	808	3859	3810	03	00	04	00	3812
09	2022	12607	4329	8343	2946	11328	11441	01	00	03	00	11857
10	1973	8954	7329	5497	1576	8385	8190	05	01	04	01	7581
11	2743	9942	2101	13169	1	15157	15366	00	00	08	01	17628
12	2498	5804	6101	17908	1078	13949	13647	01	00	08	04	12752
13	3339	6196	4640	4792	1932	8427	8079	04	02	02	00	7404
14	1763	1444	5805	500	174	2441	2267	06	02	02	02	1943
15	3478	7320	4942	14035	407	6998	6803	04	04	04	00	6614
16	8482	12212	154	14491	2	30493	29338	00	00	04	05	26025

W = gross wages + salaries (billions)
S = man—hours of strike (thousands)
PB = production to other industrial branches (billions)
PC = production to final consumption (billions)
PE = production to exports (billions)
L = size of employment 1974 (thousands)
L1 = size of employment 1973 (thousands)
DOD = direct outdegree
IOD = indirect outdegree
DID = direct inaegrees
IID = indirect indegrees
L7 = size of employment 1970 (thousands)
VL = (L – L7)/L7 (percent)
PTO = PB + PO
TP = (PB + PC)/L
IP = PB/L

ODT = ODD + IOD + loops (≥ 500.000)

3. See for the Italian case: Sylos Labini, "Forme di mercato, sindacati ed inflazione," *Rassegna Economica*, November-December 1970, pp. 92-94 (revised ed. in *Sindacati, inflazione, produttivita* [Bari: Laterza, 1974]; English trans., *Trade Unions, Inflation, and Productivity* [Lexington, Mass.: Heath, 1974]); and, in a looser form, E. Gorrieri, *La giungla retributiva* (Bologna: Mulino, 1972), pp. 225-48.

Sylos Labini regresses strike hours on labor market variables (unemployment) and then uses the strike residuals as an indicator of union power ("azione sindacale"). This procedure has been criticized both on statistical grounds (the strike hours are not weighted for the variable employment levels) and on econometric prediction grounds (the predictor—strike residuals—is actually much less predictable than the wage variable it should predict). See E. Tarantelli, "Mercato del lavoro, politiche salariali e politica economica," mimeo., CESPE, Rome, 1976. However, Sylos is the first explicit attempt to incorporate in a wage equation distinct measures of "economic" versus "political" power, parsimoniously derived from the same strike-unemployment data set.

4. This problem is quite similar to the familiar practice of measuring labor's power by the extent to which wages are above an hypothesized "competitive equilibrium" level. The argument is typically that such an "excess" wage implies a "monopoly rent" which can only occur where labor is sufficiently powerful to block free entry of workers into a given market. Again, as in the strike variable, a consequence of power is being used as a measure of power. The locus classicus of this argument is A. Marshall, *Principles of Economics* (London: Macmillan, 1920), pp. 384-86. Other classical statements of this kind are: J. R. Hicks, *The Theory of Wages* (London: Macmillan, 1932), pp. 241-46; M. Friedman, "Some Comments on the Significance of Labor Unions for Economic Policy," in *The Impact of the Union*, ed. D. McWright (New York: Kelley and Millman, 1951), pp. 207-8; and for the Marxist version of the same problem, J. Robinson, *The Economics of Imperfect Competition* (London: Macmillan, 1933), chap. 22. A recent survey is provided by G. E. Johnson, "Economic Analysis of Trade Unionism," *American Economic Review*, May 1975, pp. 23-28.

5. The nondistinction of power effects and power potential implies an all-or-nothing, ever-maximizing concept of groups and organizations. The idea that unions hold power in reserve may be conveniently rationalized by the hypothesis that they are "satisficing" rather than "optimizing." See A. Rees, *The Economics of Work and Play* (New York: Harper and Row, 1973), pp. 125-37 (revised ed. in *Industrial Conflict*, ed. A. Kornhauser [New York: McGraw-Hill, 1954]) on the inconsistencies of maximizing models of union goals. This "reservoir" (*potential* wage hikes, et cetera) is then seen as being crucial in the exchange relationships with both members and economic or political authorities. For a formal presentation of the satisficing logic and the ensuing reservoir (or "slack") of power and resources in organizational theory, see: J. G. March and H. A. Simon, *Organizations* (New York: Wiley, 1958), pp. 140ff; and Cyert and J. G. March, *A Behavioral Theory of the Firm* (Englewood Cliffs, N. J.: Prentice Hall, 1963). For a classical statement of the opposite view, that unions tend to maximize something or other, see J. T. Dunlop, *Wage Determination under Trade Unions* (New York: A. Kelley, 1950), chap. 2.

6. M. W. Reder, 1959, p. 139. [I have been unable to locate this reference and thus can give only the name, date, and page—EOW].

7. See D. Ricardo, *Works and Correspondence*, ed. Straffa (Cambridge: Cambridge University Press, 1951), 1: 412ff.

8. See, e.g.: R. A. Dahl, "The Concept of Power," *Behavioral Science* 2 (1957): 201-15; P. Blau, *Exchange and Power in Social Life* (New York: Wiley, 1964); D. Wrong, "Some Problems in Defining Social Power," in *Recent Sociology* ed. H. P. Dreitzel (New York: Macmillan, 1969), pp. 46-60; and, for the "nondecision" variant of negative power, P. Bachrach and S. M. Baratz, "The Two Faces of Power," *American Political Science Review* 56 (1962): 947-52.

9. Reder, 1959, p. 134 [see footnote 6 concerning reference]. Reder, ibid., substantiates the statement on orthodox grounds as follows:

> For example a union *X* with a large *R* the ratio of union members' wage bill to the total cost of a typical employer might be able to raise wages only slightly above competitive levels without driving an employer out of business, while a union *Y* with a smaller *R* could bring its members greater gains per hour of employment. However, the former could, by a strike threat, force management to adopt a variety of personnel practices or status-enhancing concessions to the union which it found unpalatable though not cost-increasing (in large amounts), whereas similar demands by the latter union would be met with great resistance. The reader may well ask: if this is true, then why would the employer agree to raise the wages of *Y*'s members proportionately more than those of *X*'s? The answer lies in the properties of the employer's utility function. If the employer by nature or the rigors of competition is a pure profit maximizer, our argument is wrong. But employers with true entrepreneurial rents (from the viewpoint of the industry), or with prospects of long-lived quasi-rents in an expanding industry, or with downright monopoly power, might indulge their preference for good employee relations by "buying off" a union with a small *R*, even though they felt unable to afford the same policy with regard to a union with a large *R*, because the reduction in money profits would be so much greater in the latter case.

10. See G. Sartori, "Il potere del lavoro nella societa post-pacificata: un futurbile sindicale," in *Sindacati e politica nella societa post-industriale*, ed. G. Urbani (Bologna: Mulino, 1976), pp. 77-127.

11. For the Italian case, see R. Convenevole, *Processo inflazionistico e redistribuzione del reddito* (Torino: Einaudi, 1977).

12. F. Parkin, *Marxism and Class Theory: A Bourgeois Critique* (New York: Columbia University Press, 1979), p. 80

13. The almost universal agreement of this shift of power to the workers does not imply an agreement on the final balance. For example, A. Flanders, *Management and Unions* (London: Faber and Fraser, 1970), suggests that "the balance of power between employers and employees has shifted very much more in the latters' favor"; and C. K. Rowley, "The Economics and Politics of Extortion" in *Trade Unions: Public Goods or Public Bads?* ed. A.A.V.V. (London: Institute of Economic Affairs, 1978), p. 91, pulling this point to the extreme, sees the relationship between capital and labor "most effectively defined as extortion: the term extortion refers to such an act of obtaining payments in return for not imposing harmful effects on other citizens." These views have been strongly rejected by A. Fox, *Beyond Contract* (London: Faber and Fraser, 1974).

14. B. C. Roberts, "Affluence and Disruption" in *Man and the Social Sciences* ed. W. A. Robson (London: Allen Unwin, 1972), pp. 266, 269.

15. S. E. Finer, "The Unions and Power," in *New Society* 6 (February 1975): 329.

16. See: ibid.; G. Satori, "Il potere del lavoro nella societa post-pacificata: un futuribile sindacale," in *Sindacati e politica nella societa post-industriale*, ed. G. Urbani (Bologna: Mulino, 1976), pp. 77-127; A. Pizzorno, "Political Exchange and Collective Identity in Industrial Conflict," in *The Resurgence of Class Conflict in Western Europe Since 1968*, ed. A. Pizzorno and C. Crouch (London: Macmillan, 1977); C. K. Rowley, "The Economics and Politics of Extortion," in *Trade Unions: Public Goods or Public Bads?*, ed. A.A.V.V. (London: Institute of Economic Affairs, 1978); F. Parkin, "Social Closure Strategies in Class Formation" in *The Social Analysis of Class Structure*, ed. F. Parkin (London: Tavistock, 1974), pp. 11-12; and *Marxism and Class Theory*, pp. 74-78.

17. To our knowledge, M. Olson, *The Logic of Collective Action* (Cambridge: Harvard University Press, 1971), has set forth the best formalization of such emerging logic in collective action: the scarce visibility and operativeness of incentives to individual participation in collective organizations implies that "the larger the group the farther it will fall short of providing an optimal supply of collective good" (p. 35, p. 48) and the smaller the group the more specific and direct the collective interests and the more efficient their pursuit. Ibid., pp. 35, 48, chaps. 1-2. For a mathematical formalization see ibid., pp. 23-33. Olson analyzes the economies of information and incentives making for suboptimality within groups as such, but he does not specify the external conditions (for example, the different strategy positions within a flow) supplementing more power to *some* groups *ceteris paribus*. This latter question, rather exogenous to the social psychology of Olsonian groups, is our focus of research.

18. See G. Urbani, "Introduzione" in *Sindacati e politica*, ed. Urbani, pp. 7-49, for a review of the literature.

19. This understanding of the "duration" measure, introduced by Ross and Hartman's classic comparative work, *Changing Patterns of Industrial Confict* (New York: Wiley, 1960), has persisted in the current research practice. Cf. L. Bordogna and G. Provasi, "Il movimento degli scioperi in Italia" and "L'analisi empirica della conflittualita: nota metodologica" in *Il movimento degli scioperi nel XX secolo*, ed. G. P. Cella (Bologna: Mulino, 1979): "The third indicator (n. of workdays lost) refers to the degree of toughness of conflict. It gathers the amount of days lost times the workers involved for any given strike. The yearly statistic of this measure is thus sensitive to any bias in the collection of other measures. In spite of this, it is the methodologically safest and least ambiguous indicator, as the overall n. of workdays lost is not substantially affected by small unofficial and unreported strikes. It is also the most reliable indicator of the overall 'economic damage' (foregone production) caused by the strike action, and may therefore be defined as the indicator of the *volume* or *severity* of strikes." Ibid., p. 632.

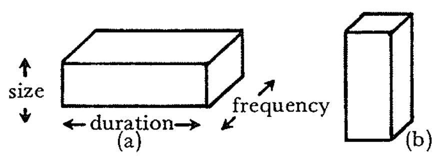
20. See: R. Forkheimer, "Some International Aspects of the Strike Movement," *Oxford University Institute of Statistics Bulletin*, 1948, n. 10; D. Britt and O. Galle, "Industrial Conflict and Unionization," *American Sociological Review* 37 (1972): 46-57; E. Shorter and C. Tilly, *Strikes in France 1830-1968* (Cambridge: Cambridge University Press, 1974); D. A. Hibbs, "Industrial Conflict in Advanced Industrial Societies," *American Political Science Review* 70 (1976): 1032-58; and idem, "On the Political Economy of Long Run Trends in Strike Activity," *British Journal of Political Science* 8 (1978): 153-75.

21. See the influential econometric model by O. Ashenfelter and G. E. Johnson,

"Bargaining Theory, Trade Unions and Strike Activity," *American Economic Review* 59 (1969): 35-49. This model was recently tested for Italy by R. Franzosi, "Le determinanti economiche degli scioperi in Italia 1959-78: test del modello Ashenfelter e Johnson," *Secondo Rapporto CSC sull'Industria Italiana* (Rome: Confindustria, 1979). Other cases of such reductionism are D. Sapsford, "A Time-Series Analysis of U. K. Industrial Disputes," in *Industrial Relations* 14 (1975): 242-49; and R. Stern, "Intermetropolitan patterns of strike frequency," *Industrial and Labor Relations Review* 29 (1976): 218-35.

22. The most paradigmatic example is given by E. Shorter and C. Tilly, *Strikes in France 1830-1968* (Cambridge: Cambridge University Press, 1974), who found that the total man-days lost (volume) due to strikes in France was about the same in the 1830s as it was in the 1960s. However, the strikes in the two periods were very different in that the individual components of the strike statistic, and thus the over-all shape, had changed. In order to indicate these differences in shape, the researchers visualized strike volume as a rectangular solid the dimensions of which are frequency, size, and duration. These components may vary independently, in other words, they may generate different cubes of the same volume (see below).

Hypothetical Strike Profiles: Early (a) and Modern (b)



In particular, the early industrial strike (*a*) was found to be comparatively long in duration and low in size and frequency, indicating the bitter economic test of strength ("trench warfare") in solidaristic but locally restricted working–class communities. The modern type of strike (*b*) is short in duration but high in frequency and size, indicating a shift from economic to political-symbolical functions, a sort of "guerilla warfare" addressed to the state or to the national community rather than to the single employer or industry. Cf. ibid., pp. 46-75 *passim*.

23. K. G. J. C. Knowles, "Work Stoppages in the U. K.: A Comment," in *Bulletin of the Oxford Institute of Economics and Statistics* 28 (1966): 66.

24. M. Benetti and M. Regini, "Confronti temporali e spaziali sui conflitti di lavoro," in *Conflittualita ed aspetti normativi del lavoro*, ed. P. Alessandrini (Bologna: Mulino, 1978), pp. 35-85.

25. The classical presentation of the input-output tables is due to Leontief 1941 and 1951. An introductory description of this scheme of economic relationships for the Italian case is given by M. D'Antonio, *Sviluppo e crisi del capitalismo italiano* (De Donato, 1973). A more advanced Italian treatment of the matrix within the general frame of the theory of production is provided by L. Pasinetti, *Lezioni di teoria della produzione* (Bologna: Mulino, 1975), pp. 45-90, and Mathematical Appendix.

26. See L. Esposito and P. Persico, "Il mutamenti strutturali e dimensionali della industria italiana 1961-1971," in *Crisi e ristrutturazione nell'economia italiana*, ed. A. Graziani (Torino: Einaudi, 1975); G. Fua, *Occupazione e capacita produttive: la realta italiana* (Bologna: Mulino, 1976).

27. See C. Dell'Aringa, *Egualitarismo e sindacato: l'evoluzione dei differenziali retributivi* (Milan: Vita e Persiero, 1976).

28. See Bordogna and Provasi, "Il movimento degli scioperi in Italia" and "L'analisi empirica," pp. 224ff.

29. See: A. Hansen, "Cycles of Strikes," *American Economic Review* 9 (1921): 616-21; T. Leavitt, "Prosperity vs. Strikes," *Industrial and Labor Relations Review* 6: 220-26; and, on a secular time series, E. Hobsbawm, "Tendenze del movimento operaio britannico," in *Studi di storia del movimento operaio* (Torino: Einaudi, 1972).

30. See Bordogna and Provasi, "Il movimento degli scioperi in Italia" and "L'analisi empirica," pp. 239ff.

31. See: ibid.; and, for the same conclusion with somewhat different historical breakdowns, G. Fua, *Occupazioni e capacita produttive: la realta italiana* (Bologna: Mulino, 1976); and R. Franzoni, "Le determinanti economiche degli scioperi in Italia 1959-78: test del modello Ashenfelter e Johnson," *Secondo Rapporto CSC sull'Industria Italiana* (Rome: Confindustria, 1979).

32. See: Shorter and Tilly, *Strikes in France 1830-1968*; Pizzorno, "Political Exchange and Collective Identity in Industrial Conflict"; Hibbs, "Industrial Conflict in Advanced Industrial Societies"; E. Tarantelli, "Mercato del lavoro, politiche salariali e politica economica," mimeo., CESPE, Rome, 1976.

33. Pizzorno, "Political Exchange and Collective Identity in Industrial Conflict."

34. Aside from the historical fluctuations, a technical problem in reporting this "mass" dimension lies in the poor standardization of the relevant indicator ("workers involved"). Some countries count in the figure only the *directly* involved workers, that is, the participants *stricto sensu*; whereas others count in also the *indirectly* involved workers. This latter is not a very useful indicator. The first count, however, is grounded on a distinction that is very difficult and often skipped by the firms' reports to the Public Authority. See M. Benetti and M. Regini, "Confronti temporali e spaziali sui conflitti di lavoro," in *Conflittualita ed aspetti normativi del lavoro*, ed. P. Alessandrini (Bologna: Mulino, 1978), pp. 43-44. Another problem is given by the non-integer nature of this indicator, which is "derived" by other data with often paradoxical statistical outcomes. For example, the lesser the duration and the higher the frequency of strikes, especially in collective bargaining years, the more likely the "involved workers" figure will be *higher* than the figure of the total employees. This was the case for Italy in 1973 and 1975 yearly figures; see ibid.

35. A telling example is given by the immediately "political" reach of the strikes in so interdependent an area as transportation and by the consequent escalation in the political hierarchies in charge of the grievance resolution. Winter 1980 strikes by so restricted a category of workers as the radar-control personnel in Italian airports could not be settled by the top executive level of government (Consiglio dei Ministri), let alone by the Alitalia management and the ministers of transports and defense. The strikes were brought to a (temporary) suspension only because of the personal and direct intervention of the president. The strike of a similarly limited category of transport workers, the teamsters, caused the Allende Government in Chile to collapse. For descriptive evidence on these kinds of strikes see: H. H. Wellington and R. K. Winter, *The Unions and the Cities: Studies of Unionism in Government* (Washington, D.C.: Brookings, 1971); and P. Dubois, *Sabotage in Industry* (Haringrosworth, England: Penguin, 1979).

36. See F. Harary, R. Z. Norman, and D. Cartwright, *Structural Models: An Introduction to the Theory of Directed Graphs* (New York: Wiley, 1965), pp. 136-37.

37. A. Pizzorno, "Political Exchange and Collective Identity," p. 410, explains this logic of labor force size as follows:

> The resource in the hands of workers in the case of political exchange is regulated according to completely different criteria from the case of collective bargaining. Market power in the latter case depends on the demand for labor. The value of the consensus resource depends instead on other circumstances. Consider, for instance, the different quantitative impact of a strike. A strike by all the workers of an employer or a particular industry will have the same effects on collective bargaining irrespective of the absolute number of participants. But in the case of political action affecting social consensus, the size of the group (i.e., the absolute, not the relative, number of workers concerned) is very important. A strike by one hundred participants in a hundred employees firm will have about the same consequences in the bargaining process as a strike by one hundred thousand in a hundred thousand employees firm. But only the latter will be politically relevant.

38. See E. Kuh, "A Productivity Theory of Wage Levels: An Alternative to the Phillips Curve," in *Review of Economic Studies*, February 1967; Sylos Labini (1974), chap. 2.

39. A. Fox, *Beyond Contract* (London: Faber and Fraser, 1974), p. 276.

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