THE STRUCTURE OF INTERORGANIZATIONAL ELITE COOPTATION: INTERLOCKING CORPORATE DIRECTORATES*

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Interorganizational elite cooptation, in the form of interlocking corporate directorates, is viewed as a cooperative strategy between economic organizations for reducing sources of uncertainty in their environments. Specifically, corporate interlocking is a means of anticipating or controlling sources of uncertainty stemming from the potentially disruptive unilateral actions of other corporations. In order to examine the relevant hypotheses, two comparable samples are constructed comprising the 200 largest nonfinancial and the 50 largest financial corporations as ranked by their assets for the periods 1935 and 1970. As hypothesized, the size of a corporation is directly related to the frequency of interlocking in general, even controlling for the size of its directorate. Also, financial corporations maintain more interlocks in general than nonfinancial corporations due to the importance of capital as a resource. Contrary to the theory, there is no clear relationship between such organizational characteristics as capital intensity and growth and the frequency of interlocking with financial corporations; moreover, there is even a significant negative relationship between dependency on external debt obligations and frequency of financial interlocking. As hypothesized, corporations with local market environments maintain a greater proportion of their interlocks at the local level than other corporations. Also, the structure of corporate interlocking has become more diffuse through time with a smaller proportion of the interlocks being maintained at the local level. However, contrary to the theory, the frequency of interlocking with financial corporations has increased rather than decreased through time.

INTRODUCTION

The term "interlocking directorate" typically refers to any situation in which two or more corporations share one or more directors in common. As such, corporate interlocking has been the object of concern for both legislators (U.S. Congress, 1965; 1967) and social scientists (Warner and Unwalla, 1967; Dooley, 1969; Levine, 1972). Implicit in almost every discussion of this phenomenon is the assumption that interlocking directorates serve as at least partial evidence that contemporary industrial society is dominated by a coherent and cohesive economic elite. For that reason, the extent of interlocking among major corporations is often a central issue in the continual debate between adherents of the pluralist and elitist conceptions of society (Mills, 1959; Domhoff, 1967; Rose, 1967). However, most of these discussions have inadvertently ignored the fundamental causes of corporate interlocking. Relatively little attention has been devoted to the functions which these interlocks perform for the corporations that participate in them. It is the central premise of this study that interlocking directorates are at least partially explicable in terms of a theory of interorganizational elite cooptation. A theoretical paradigm is advanced which suggests that interorganizational elite cooptation, in the form of interlocking directorates, represents an attempt by corporations to anticipate environ-

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mental contingencies and to control their relationships with other corporations.

Many of the empirical studies of interlocking directorates are descriptive in design. For example, congressional investigations of corporate interlocking are primarily concerned with the issue of economic concentration and with possible violations of antitrust legislation (U.S. Congress, 1965, 1967). Similarly, in a recent study using congressional data on interlocking between major banks and other major nonfinancial corporations, Levine employs an unfolding variant of smallest space analysis to generate a multidimensional representation of the proximities between the nonfinancial corporations (1972). Some studies examine corporate interlocking with respect to certain characteristics of the corporations. For example, using original data on a sample of 500 corporations, Warner and Unwalla analyze the frequency of interlocking between corporations in different industries and between corporations with headquarters in different geographical areas (1967). One of their major findings is that financial institutions maintain a disproportionate number of interlocks with other corporations. Warner and Unwalla conclude that this pattern reflects "the all important position and power of money and credit in corporate activity" (1967:156). Similarly, in one of the most rigorous empirical analyses of interlocking directorates, Dooley accounts for the frequency of interlocking in terms of economic considerations (1969). He considers such factors as the size of the corporation, its relationship to competitors, and the existence of local economic interest groups. In general, Dooley concludes that the managerial autonomy of a corporation is limited to the extent that external interests are represented on the board of directors (1969:332). Although much of the empirical research on interlocking directorates does not involve explicit theoretical propositions, virtually every study is initiated and directed by a set of implicit theoretical assumptions. The basic assumption appears to be that corporate interlocking is a cooperative strategy for regulating the relationships between organizations which are to some extent dependent upon one another.

THEORY

The interorganizational paradigm in sociological theory focuses on the organization as it operates within a larger environment comprised of other organizations. Typically, these organizations are assumed to be somewhat dependent upon one another. Indeed, the degree of interdependence between any two organizations is a function of the extent to which they exchange scarce resources. One of the central hypotheses of this paradigm is that interdependent organizations tend to develop various cooperative strategies with respect to one another (Thompson and McEwen, 1958; Evan, 1966; Thompson, 1967). These strategies permit organizations to reduce or control important sources of uncertainty in their environments by limiting or anticipating the potentially disruptive unilateral actions of other organizations. The three principal cooperative strategies proposed by Thompson (1967:36) are contracting, coopting, and coalescing. According to this theory, cooptation tends to occur whenever the supply of a particular resource is concentrated among a few organizations but the demand for this resource is dispersed among many organizations. Alternatively, contracting tends to occur whenever both the supply of and the demand for the resource is concentrated among a few organizations. Conversely, whenever both the supply of and the demand for the resource are concentrated among a few organizations but the control afforded by contracting is inadequate, the organizations tend to coalesce. It is relevant to note that the hypothesis concerning cooptation as a cooperative strategy is consistent with the general theory of social systems (Evan, 1966). Indeed, in his theory of formal organizations, Parsons suggests that the relationship between an organization and its environment is monitored and mediated by the members of the institutional or elite level within the organization (1960:59-96).

As applied to economic organizations like corporations, this theoretical paradigm requires modification. The alternative cooperative strategies of contracting and coalescing are not always available to corporations due to the restrictions imposed by antitrust legislation. The Sherman Antitrust Act of 1890 and the Clayton Antitrust Act of 1910 prohibit any contractual arrangements or combinations which restrain competition. Elite cooptation, in the form of interlocking corporate directorates, is also subject to

certain legislative proscriptions. The Clayton Antitrust Act and subsequent ancillary legislation prohibit direct interlocks between corporations which are competitors (U.S. Congress, 1965). However, indirect interlocks through other corporations which are not competitors are not prohibited by antitrust legislation. Given the extensive proscriptions established by antitrust legislation, corporations are severely limited in the types of cooperative strategies they can adopt with respect to other corporations, particularly if they are competitors.

Despite such legislation, it is apparent from the extent and persistence of corporate interlocking that this form of interorganizational elite cooptation serves important functions for those corporations (Dooley, 1969:315; Warner and Unwalla, 1967:122). Although empirical evidence on this subject is limited, the primary function of corporate interlocking appears to be the exchange of information and expertise between corporations. Corporate interlocking also provides a stable means of communication and liaison between corporations which are to some extent dependent upon one another. For example, a bank director may be asked to serve on the board of directors of an industrial corporation both because of his personal financial expertise and access to financial information and because he can facilitate important financial transactions (Gordon, 1961:127). Although directors seldom become involved with the internal management activities of a corporation, they often advise management officials concerning the relationship of the corporation to its external environment (Copeland and Towl, 1968; Mace, 1971).

The theory of interorganizational elite cooptation suggests a series of propositions or hypotheses. Some involve the relationship between organizational characteristics and the frequency of interlocking in general. First, the size of a corporation is directly related to the number of interlocks it maintains with other corporations. Large corporations are often the major suppliers or consumers of a particular resource and, therefore, represent a major source of uncertainty for other corporations. This proposition is consistent with the observation that large corporations tend to maintain more interlocks than smaller corporations (Warner and Unwalla, 1967; Dooley, 1969). However, it remains to be established whether this relationship is simply a function of the larger boards of directors among large corporations. Second, financial corporations maintain more interlocks in general than nonfinancial corporations. Financial corporations represent a major source of uncertainty for other corporations because capital is a very generalized resource with a very dispersed demand from such economic organizations as corporations.

Somewhat similar propositions can be derived concerning the organizational characteristics associated with the frequency of interlocking with such financial institutions as banks and insurance companies. First, the theory suggests that the frequency of interlocking with financial corporations is directly related to the capital intensity of a corporation. As Galbraith has noted of mature corporations, those with large capital requirements, "No form of market uncertainty is so serious as that involving the terms and conditions on which capital is obtained" (1967:50). Second, those corporations that have expanded through acquisitions and mergers maintain more interlocks with financial corporations than corporations that have not experienced such expansion. Financial corporations not only provide credit for internal expansion but they also help to negotiate acquisitions and mergers (Gordon, 1961:191). Third, the frequency of interlocking with financial corporations is directly related to the dependency of the corporation upon external sources of capital to finance its capital requirements. Financial institutions often participate in the issuance of new securities by nonfinancial corporations (Gordon, 1961:192).

In addition to these propositions, the interorganizational elite cooptation theory implies two important propositions concerning the geographical structure or distribution of corporate interlocking. These propositions follow from the fact that interorganizational environments can be defined in terms of geographical areas (Perrucci and Pilisuk, 1970; Aiken and Alford, 1970). First, the theory suggests that those corporations with primarily local and regional bases of operations maintain a greater proportion of their interlocks with corporations located within the same urban area or region than with corporations located elsewhere. To some

extent, corporations represent sources of uncertainty for one another at the local and regional level as well as at the level of the national economy. Second, large industrial corporations with national and multinational bases of operations maintain a smaller proportion of their interlocks with corporations located within the same urban area or region than small industrial corporations. This pattern is to be expected because large industrial corporations often possess more geographically dispersed bases of operations than small industrial corporations.

Finally, the theory of interorganizational elite cooptation implies three propositions concerning historical changes in the structure of corporate interlocking. First, the proportion of interlocking at the local and regional level has declined through time relative to the proportion of interlocking between corporations whose headquarters are located in different urban areas or regions. This tendency is a result of the technological improvements in communication and transportation and the subsequent integration of the national economy. Second, the frequency of interlocking with financial institutions has declined through time, especially among large industrial corporations. This proposition is consistent with the assertion that large corporations are now able to generate capital internally from retained earnings and, therefore, have reduced their dependency upon financial institutions (Gordon, 1961:214-16; Galbraith, 1967:50). Third, the structure of corporate interlocking has become more diffuse and less centralized through time. This trend is a result of the increased integration of the economy at the national level and the decreased importance of large financial institutions.

METHOD

The study of the structure of interorganizational elite cooptation in the form of interlocking corporate directorates raises some difficult methodological problems. Certainly the primary methodological problem is the construction of adequate samples. Structural or relational analysis examines the relations between units of analysis rather than the individual properties of those units (Coleman, 1958). The sociometric analysis of affectivity relations between individuals within a group represents the prime example of structural or relational analysis. This type of analysis confronts sampling problems which cannot be resolved by the conventional random sample. The most satisfactory sampling design for structural analysis is a saturation sample of the entire universe or population; however, this alternative is clearly not feasible for large social structures. Nevertheless, it is possible to construct a saturation sample of a population which has been delimited in accordance with relevant theoretical criteria. For both theoretical and substantive reasons, the samples chosen for the present study were comprised of only major corporations as defined by the size of their assets. The samples are comprised of the 50 largest financial and the 200 largest nonfinancial corporations as ranked by their assets. Actually, this is the sampling criterion employed by the National Resources Committee in its study of the structure of corporate interlocking in 1935 (1939:153-70). The adoption of the same sampling criterion for the construction of the 1970 sample of 250 major corporations insures the comparability of results between 1935 and 1970. Similar or identical sampling criteria have been employed in other studies of major corporations (Berle and Means, 1932; Gordon, 1961; Larner, 1966; Dooley, 1969). One implication of this sampling design is that the interlock data are limited to those interlocks which occurred between these 200 nonfinancial and 50 financial corporations. Interlocks between any of these 250 corporations and any other corporations are not included in the analysis.

Although the two samples were constructed on the basis of the same general criteria, they are not identical in composition. The two samples differ with respect to the number of corporations within each sample from each general industrial sector: industrial, utility, transportation, retailing, banking, and life insurance. The distributions of these corporations by industrial sector for both 1935 and 1970 are presented in Table 1. Two points are immediately evident. First, although the selection criteria were extremely general, the 200 largest nonfinancial and the 50 largest financial corporations as ranked by assets, the compositions of the two samples are remarkably similar. Second, they mainly differ with respect to the number of industrial corporations and the number of transportation corporations. The number of industrial corporations among the 200 largest nonfinan-

Table 1. Description of Samples by Type of Corporation for 250 Major Corporations in 1935 and 1970

Type of Corporation	1935	1970
Financial corporations:		
Banks	30	33
Life insurance companies	20	17
Nonfinancial corporations:		
Industrial	98	125
Nonindustrial:		
Transportation	47	17
Retailing	9	10
Public utility	46	48

cial corporations increased, while the number of transportation corporations decreased between 1935 and 1970. These changes reflect fundamental changes in the national economy during this time period.

The data on the interlocks among the 250 major corporations in 1935 were compiled and published in tabular form by the National Resources Committee (1939:298-305). These data were examined for internal consistency, since each interlock was listed twice, once for each interlocked corporation. Interlock data for the 1970 sample of 250 major corporations are original with this study. In order to collect these data, it was necessary to order alphabetically and to compare the full names of every director of every corporation in the sample. These names and their corporate affiliations were obtained from a published directory of corporation officers and directors (Standard and Poor's, 1971). Two corporations were identified as interlocked if they shared at least one director in common. If two names were similar but not identical, additional sources of information were used to determine whether the names referred to the same person (Moody's Investors Service, 1971a; 1971b; 1971c; 1971d). There were many cases of multiple interlocks in which two corporations shared more than one director in common. However, due to the tabular form of the data, multiple interlocks in the 1935 sample were categorized either as two or three interlocks or four or more interlocks. For the purposes of this study, these categories of multiple interlocks were considered simply as two interlocks or four interlocks respectively. Therefore, the 1935 interlock data underestimate somewhat the actual frequency of multiple interlocks.

As has been noted, the 1935 sample was constructed by the National Resources Committee (1939:99-101) on the basis of information contained in the publications of investment services. Data on the economic characteristics of these corporations were obtained from these same investment publications (Moody's Investors Service, 1936a; 1936b; 1936c; 1936d). The corporations in the 1970 sample of 250 major corporations were identified on the basis of information presented in the annual directory of large corporations published by *Fortune* magazine (Fortune, 1971a; 1971b). Data on the economic characteristics of these corporations were obtained from the *Fortune* directory (Fortune, 1966a; 1966b; 1971a; 1971b) and from investment publications (Moody's Investors Service, 1971a; 1971b; 1971c; 1971d). Although systematic data on the 1935 sample of corporations were available on only a limited basis, the economic data for both samples include the assets, primary industry, location of corporate headquarters, and number of directors for each corporation. In addition, economic data for the 1970 sample include growth in assets from 1965 to 1970, stockholder equity, and number of employees. It is evident that some propositions can be examined with respect to the 1970 sample but not with respect to the 1935 sample.

In order to examine the geographical distribution of corporate interlocking, each corporate headquarters was categorized into one of twenty-three geographical areas, each associated with a major city or region. The main objective, of course, was to aggregate those corporations whose headquarters were geographically proximate with one another. In addition to the twenty-three geographical areas, a residual category was established for those corporations whose headquarters were geographically isolated from the other corporations. These geographical areas and the number of corporate headquarters located within each area are presented in Table 2 for

Table 2. Number of Corporate Headquarters Located within each Urban Area or Region for 250 Major Corporations in 1935 and 1970

Urban Area or Region	1935	1970
New York	104	88
Chicago	34	14
Los Angeles	4	13
Pittsburgh	11	6
San Francisco	10	10
Detroit	6	10
Cleveland	9	12
Philadelphia	18	14
Boston	11	5
St. Louis	10	6
Baltimore	4	3
Hartford	4	11
Milwaukee	3	3
Minneapolis	4	8
Portland	1	2
Seattle	0	3
Dallas	1	3
Houston	0	7
Cincinnati	3	5
Buffalo	2	3
Oklahoma City	2	1
Richmond	3	3
Charlotte	3	5
Isolated	3	15

both the 1935 and 1970 samples. If a corporate headquarters was not located within one of the major urban areas, it was categorized into the closest geographical area. Whenever a headquarters was located in a smaller city approximately equidistant from two larger cities representing different geographical areas, the headquarters was categorized into the area within the same state. Corporations with geographically isolated headquarters were categorized into the residual category. This method of categorization is relatively objective, although the establishment of particular geographical categories is somewhat arbitrary.

Some explanation is required of the fact that no statistical tests of significance are employed in this study. The most obvious reason is that the two samples constructed for this study patently violate the assumption of random sampling required by most common statistical tests of significance. Consequently there is no attempt to draw inferences about any larger populations of corporations. Indeed, the two samples can be considered as the populations of theoretical interest. Moreover, it can be argued that statistical tests of significance might lead to the premature rejection of theoretically and substantively significant relationships. In short, statistical tests are omitted not only because they are unwarranted methodologically but also because such tests of significance might tend to obscure rather than clarify the analysis.

FREQUENCY OF INTERLOCKING IN GENERAL

Given the data on the two samples of corporations at two points in time, it is possible to assess the empirical adequacy of several theoretical propositions at both points in time and to compare these results in an historical perspective. The first proposition involves the hypothesized relationship between the size of a corporation and the total number of interlocks it maintains with other corporations. As the earlier research suggests, there is a positive relationship between size and interlocking in general among major corporations. Specifically, the correlation between size of assets and total number of interlocks is 0.571 for the 1970 sample and 0.504 for the 1935 sample. As has been noted, it might be argued that this relationship is attributable to the larger boards of directors presumably found among the larger corporations. In order to examine this argument, it is necessary to control for the effects of the size of the board of directors on frequency of interlocking. The partial correlation between size and total number of interlocks, controlling for the size of the board of directors, is 0.489 for the 1970 sample. Among the 250 major corporations in 1935, the comparable partial correlation is 0.438. A path diagram of this relationship between the size of the assets of a corporation, the size of its board of directors, and the total number of interlocks it maintains with other corporations is presented in Figure 1. The two sets of path coefficients are the standardized regression coefficients between the variables in the model for both the 1935 and the 1970 samples. In terms of explained variance, the two explanatory variables account for approximately 46 percent of the variance in the criterion variable in 1970 and 32 percent of the

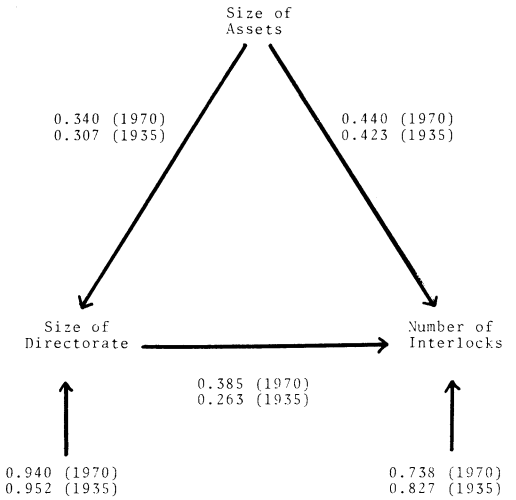

FIGURE 1. PATH DIAGRAM OF RELATIONSHIP BETWEEN SIZE OF ASSETS, SIZE OF DIRECTORATE, AND TOTAL NUMBER OF INTERLOCKS FOR 250 MAJOR CORPORATIONS IN 1935 AND 1970.

variance in 1935. Although it is inappropriate to compare standardized regression coefficients across samples, the total relationship appears to be relatively stable across the two samples. These results demonstrate that the relationship between the size of a corporation and the total number of interlocks it maintains is only partially attributable to the size of its board of directors.

Another hypothesis asserts that financial corporations maintain more interlocks in general than nonfinancial corporations because financial institutions constitute concentrated sources of supply for capital, a resource for which there is a very dispersed demand; capital is certainly the scarcest and most generalized resource required by corporations. It is readily apparent from Table 3 that this hypothesis is confirmed by a comparison of the mean number of interlocks maintained by financial and nonfinancial corporations in 1970; this differential also obtains, albeit in a more attenuated form, for the 1935 sample. Given the established relationship between the size of a corporation and the number of interlocks it maintains with other corporations, it is reasonable to question whether the differential in the mean number of interlocks between financial and nonfinancial corporations is attributable to the larger size of the financial corporation in the samples. Indeed, the comparison is between the 50 largest financial corporations and the 200 largest nonfinancial corporations in both samples. In order to control for the effects of size on the mean number of interlocks, it is possible to construct two subsamples of nonfinancial corporations which are comparable in size to the financial corporations. Consequently, each subsample of large nonfinancial corporations includes only those corporations whose assets are larger than or equal to the assets of the smallest financial corporation in the sample. For example, since the smallest financial corporation in the 1935 sample has assets of $207 million, only those 88 nonfinancial corporations with assets larger than or equal

Table 3. Average Number of Interlocks in General Per Corporation by Type of Corporation for 1935 and 1970 Samples of 250 Major Corporations

Type of Corporation	1935	1970
All	10.40 (N:250)	10.41 (N:250)
Financial	14.80 (N: 50)	16.92 (N: 50)
Nonfinancial	9.30 (N:200)	8.79 (N:200)
Industrial	8.32 (N: 98)	9.62 (N:125)
Nonindustrial[a]	10.25 (N:102)	7.41 (N: 75)
Large nonfinancial[b]	13.17 (N: 88)	12.49 (N: 53)

[a]Nonindustrial corporations defined as public utilities, transportation companies, and retailing companies.

[b]Large nonfinancial corporations defined as those with assets greater than or equal to the assets of the smallest financial corporation in the sample; corporations with assets greater than or equal to $207 million in 1935 or $2,196 million in 1970.

to $207 million were included in the comparison subsample. Similarly, the 1970 comparison subsample includes only those 53 nonfinancial corporations with assets greater than or equal to $2,196 million, since the smallest financial corporation in 1970 has assets of $2,196 million. Comparing these nonfinancial corporations with the financial corporations in each sample, it is apparent that the hypothesized relationship is maintained but that the differential is not nearly as great as in the total samples. These results are also presented in Table 3. Financial corporations maintain more interlocks in general than nonfinancial corporations but the difference is largely attributable to the larger size of financial corporations in terms of their assets.

FREQUENCY OF INTERLOCKING WITH FINANCIAL INSTITUTIONS

Three theoretical propositions have been advanced concerning the relationship between economic characteristics of corporations and the number of interlocks they maintain with financial institutions. The first hypothesis asserts that the frequency of financial interlocking is directly related to the capital intensity of a corporation because corporations with large capital requirements seek immediate access to financial institutions. Due to the lack of sufficient data, it is not possible to examine this proposition with respect to the 1935 sample. However, it is possible to examine it with respect to the 1970 sample using the ratio of assets to the number of employees as an indirect measure of the capital intensity of a corporation. The observed correlation coefficients between the frequency of financial interlocks and this indirect measure of capital intensity are presented in Table 4 by type of corporation. It is surprising to discover that this theoretical proposition is disconfirmed by the empirical results for the 1970 sample. Contrary to the hypothesis, the relationship between capital intensity and financial interlocking is both negative and weak. It is of interest to note that this negative correlation is stronger among the 75 nonindustrial corporations than among the 200 nonfinancial corporations. This finding suggests that the negative relationship between capital intensity and financial interlocking is strongest among such nonindustrial corporations as public utilities and transportation companies. Indeed, the correlation between capital intensity and financial interlocking is -0.304 among the 48 public utility and 17 transportation corporations in the 1970 sample. These types of corporations share at least two common characteristics. First, both public utilities and transportation companies are relatively capital intensive. Second, both types of corporations are highly regulated by such governmental agencies as the Federal Power Commission and the Interstate Commerce Commission. The results suggest that, contrary to the hypothesis, there is a negative relationship between capital intensity and financial interlocking, especially among corporations which

Table 4. Correlations Between Organizational Characteristics and Frequency of Financial Interlocking by Type of Corporation for 250 Major Corporations in 1970

Type of Corporation	Capital Intensity	Growth of Assets[a]	Debt Ratio
All (N:250)	-0.027	-0.165	-0.126
Financial (N:50)	0.053	-0.295	-0.028
Nonfinancial (N:200)	-0.179	-0.090	-0.226
Industrial (N:125)	-0.005	-0.172	-0.240
Nonindustrial (N:75)[b]	-0.277	0.082	-0.221

[a] Correlation between growth of assets and financial interlocking is a partial correlation controlling for average size of assets between 1965 and 1970.

[b] Nonindustrial corporations defined as public utilities, transportation companies, and retailing companies.

operate within highly regulated market environments.

The second proposition concerning the frequency of financial interlocking proposes that corporations that have recently expanded in size, through acquisitions or mergers, maintain more financial interlocks than other corporations because financial institutions typically provide the capital and expertise required for such expansion. This hypothesis suggests that the growth in size of a corporation is positively related to its frequency of financial interlocking. For the sample of 250 major corporations in 1970, the growth of each corporation can be measured by the difference in its assets between 1965 and 1970. However, given the established relationship between absolute size of assets and interlocking in general, it is necessary to control for the average size of assets between 1965 and 1970. The partial correlation coefficients between growth in assets and financial interlocking, controlling for average assets, are presented in Table 4 by type of corporation. Contrary to the hypothesis, most of the observed correlations between growth and financial interlocking, controlling for assets, are low and negative. Indeed, there is a moderately high negative correlation between growth in assets and financial interlocking, controlling for average assets, among financial corporations.

It has also been hypothesized that the frequency of interlocking with financial institutions is directly related to the dependency of the corporation upon external obligations such as loans and bonds to finance its capital requirements. One of the best measures of the dependency of a corporation upon external debt obligations rather than internal sources of capital is the debt ratio (Lintner, 1959:177-9). This measure is simply the ratio of total debt liabilities, as total assets minus stockholder equity, to the total assets or capital of the corporation. The correlation coefficients between the debt ratio and the frequency of financial interlocking are presented in Table 4 by type of corporation for 1970. It is apparent from these correlations that this theoretical proposition is disconfirmed by the empirical results. Although the correlations are not especially strong, they are all negative. There is one possible alternative explanation for this situation. Since the debt ratio is inversely related to the ability of a corporation to finance its capital requirements from internal sources of capital such as retained earnings and stock issues, this situation may be attributable to the fact that financial institutions are often the principal stockholders of many other corporations. Large commercial banks, in particular, are often major stockholders of many other large corporations due to the investment activities of their trust departments (U.S. Congress, 1968). This alternative explanation is generally consistent with the empirical results. For example, the correlation between the debt ratio and the number of interlocks with the 33 commercial banks in the 1970 samples is −0.288 among the 200 nonfinancial corporations.

GEOGRAPHICAL DISTRIBUTION OF CORPORATE INTERLOCKING

As regards the geographical distribution of corporate interlocking, the first theoretical proposition states that corporations with local and regional bases of operations maintain a greater proportion of their interlocks with other locally and regionally based corporations than those corporations with primarily national bases of operations. In order to examine this hypothesis, locally and regionally based corporations are defined as financial corporations and nonindustrial nonfinancial corporations such as public utilities, transportation companies, and retailing corporations. This classification considers industrial corporations as those with predominantly national bases of operations. The percentages of all interlocks which occur between corporations located within the same urban areas or regions are presented in Table 5 by type of corporation for both the 1935 and 1970 samples. This proposition is only partially confirmed by the empirical results. In both 1935 and 1970, financial corporations maintain more interlocks at the local and regional level than industrial corporations. However, nonindustrial nonfinancial corporations do not maintain more interlocks at the local and regional level than industrial corporations, although there is a slight differential in 1935. Although the results are not presented, this pattern is not altered appreciably when New York based corporations are excluded from the analysis.

The second theoretical proposition of this

Table 5. Percentages of Interlocks between Corporations with Headquarters Located within the Same Urban Area or Region by Type of Corporation for 1935 and 1970 Samples of 250 Major Corporations

Type of Corporation	1935	1970
All	54.0% (N:250)	43.4% (N:250)
Financial	64.1% (N: 50)	51.1% (N: 50)
Nonfinancial	50.0% (N:200)	40.8% (N:200)
Industrial	50.4% (N: 98)	39.4% (N:125)
Nonindustrial[a]	49.7% (N:102)	40.6% (N: 75)
Large industrial[b]	47.3% (N: 50)	39.4% (N: 50)
Small industrial	55.1% (N: 48)	39.5% (N: 75)

[a]Nonindustrial and nonfinancial corporations such as public utilities, transportation companies, and retailing corporations.

[b]Large industrials defined as 50 largest industrial corporations in terms of assets.

type states that large industrial corporations, with their predominantly national and multinational bases of operations, maintain a smaller proportion of their interlocks at the local and regional level than small industrial corporations. In order to examine this proposition, large industrial corporations are defined as the 50 largest industrial corporations in each sample. All other industrial corporations are defined as small industrial corporations. Once again, the percentages of all interlocks which occur between corporations located within the same urban area or region are presented in Table 5 by type of corporation for both samples. Generally, the empirical results appear to confirm the hypothesis but not without qualification. Large industrial corporations maintain significantly fewer interlocks at the local and regional level than small industrial corporations in 1935 but not in 1970. Once again, this empirical pattern is not altered appreciably when New York based corporations are excluded from the analysis, although these results are not presented.

HISTORICAL CHANGES IN THE STRUCTURE OF CORPORATE INTERLOCKING

The last set of theoretical propositions involves historical changes in the structure of corporate interlocking. Specifically, the first hypothesis asserts that the proportion of interlocking at the local and regional level has declined through time due to the improvements in the national communication and transportation systems. The percentages of all interlocks between corporations whose headquarters are located within the same urban area or region are presented in Table 5 by type of corporation for both the 1935 and 1970 samples. These results indicate that there has been about a 10 percent decline in the proportion of interlocking at the local and regional level from 1935 to 1970. This decline is somewhat more pronounced among financial corporations and smaller industrial corporations than among larger industrial corporations and nonindustrial nonfinancial corporations such as public utilities, transportation companies, and retailing corporations. These differential changes are interpretable in terms of the theoretical propositions concerning the geographical distribution of corporate interlocking. This hypothesis is confirmed by the empirical results. Although no empirical results are presented, this general empirical pattern obtains even when New York based corporations are excluded from the analysis.

Another proposition of this type proposes that the frequency of interlocking with financial institutions has declined through time, especially among large industrial corporations, because these corporations have attained an increased capacity to generate cap-

ital internally through retained earnings. The average number of financial interlocks per corporation is presented in Table 6 by type of corporation for the 1935 and 1970 samples. It is obvious that this hypothesis is disconfirmed by the empirical results. The frequency of interlocking with financial corporations has increased appreciably through time, particularly among the 50 largest industrial corporations in each sample. This pattern is especially significant in view of the fact that interlocking in general has not increased appreciably through time. In short, these results suggest that financial institutions have become more important with respect to corporate interlocking rather than less important through time. It is possible that, although corporations may have reduced their dependency upon banks and life insurance companies for capital, industrial corporations may have increased their dependency upon financial institutions for economic information and expertise.

The last theoretical proposition maintains that the structure of corporate interlocking has become more diffuse and less centralized through time. Empirical evidence concerning the proportion of all interlocks maintained at the local and regional level indicates that corporate interlocking has become more diffuse geographically. The structure of corporate interlocking has also become more diffuse in terms of the number of interlocks maintained by each corporation. The frequency distributions of corporations by the number of interlocks they maintain in general are presented in Table 7 for both the 1935 and 1970 samples. Several points are of interest in this regard. First, the number of corporations with no interlocks declined from 25 in 1935 to 13 in 1970. Second, the number of corporations with more than 25 interlocks declined from 23 in 1935 to 14 in 1970. These results are particularly instructive in view of the fact that the total number of interlocks among the 250 major corporations did not increase from 1935 to 1970, although it must be reiterated that the interlock data for the 1935 sample contain a conservative bias because of the treatment of multiple interlocks. Nevertheless, these results indicate that the structure of corporate interlocking has become more diffuse through time.

CONCLUSIONS

The basic premise of this study is that interorganizational elite cooptation, in the form of interlocking corporate directorates, represents a response to environmental uncertainty and constitutes a cooperative strategy for anticipating or controlling potentially disruptive unilateral actions by other organizations. Certainly this may not be the only theoretical explanation for the phenomenon of interlocking directorates. It might be argued, for instance, that corporate interlocking is a problem for political sociology inasmuch as interlocking directors may well

Table 6. Average Number of Financial Interlocks per Corporation by Type of Corporation for Both 1935 and 1970 Samples of 250 Major Corporations

Type of Corporation	1935	1970
All	2.96 (N:250)	3.38 (N:250)
Financial	3.12 (N: 50)	3.36 (N: 50)
Nonfinancial	2.92 (N:200)	3.38 (N:200)
Industrial	2.65 (N: 98)	3.50 (N:125)
Nonindustrial[a]	3.18 (N:102)	3.20 (N: 75)
Large industrial[b]	3.08 (N: 50)	4.08 (N: 50)

[a]Nonindustrial corporations defined as public utilities, transportation companies, and retailing companies.

[b]Large industrial corporations defined as 50 largest industrial corporations in terms of assets.

Table 7. Frequency Distributions of Corporations by Number of Interlocks in General for 250 Major Corporations in 1935 and 1970

Number of Interlocks	1935	1970
None	25	13
1 to 5	79	63
6 to 10	47	78
11 to 15	40	43
16 to 20	20	27
21 to 25	16	12
26 to 30	11	6
31 to 35	5	2
36 to 40	1	3
41 to 45	1	1
46 to 50	4	1
51 or more	1	1
Total	250	250

be considered the dominant members of the corporate elite. Nevertheless, the interorganizational paradigm is the only available theoretical perspective which attempts to explain the phenomenon at the organizational level of analysis. On the basis of the empirical evidence examined in the course of this study, it is apparent that interlocking corporate directorates are at least partially interpretable in terms of a general theory of interorganizational elite cooptation. Some of the theoretical propositions advanced on the basis of interorganizational theory are disconfirmed by the empirical results. However, these unexpected findings are as important as the expected findings in developing and elaborating an adequate theory of interorganizational elite cooptation.

Although the main purpose of this study is to formulate and evaluate a theory of interorganizational elite cooptation, the empirical results of this study have important implications for the political sociology of elites. For example, it is sometimes claimed that interlocking directorates are relatively unimportant due to the extent of management control among major corporations (Rose, 1967; Gordon, 1961). However, the coherent structure of corporate interlocking and its stability through time suggest, to the contrary, that interlocking directorates are an important and significant feature of the corporate economy. This conclusion is shared by every social scientist who has studied the empirical data on corporate interlocking (Warner and Unwalla, 1967; Dooley, 1969). Moreover, this study indicates that the structure of corporate interlocking is becoming more pervasive and integrated through time in that more corporations maintain interlocks with other corporations. However, this structure of corporate interlocking is also becoming less centralized through time in that fewer corporations maintain a large number of interlocks with other corporations. Finally, this study calls into question the widespread assumption that large corporations have become more independent from financial institutions (Gordon, 1961). The central and increasing importance of financial institutions with respect to corporate interlocking suggests that banks and insurance companies have increased rather than decreased in importance within the corporate economy. In summary, the evidence on corporate interlocking points to an increasingly pervasive and integrated structure of elite cooptation among major corporations in which financial institutions increasingly occupy the central positions.

The main limitations of the present study are due to inadequacies in the available data on corporations. Indeed the limited availability of systematic data on the organizational characteristics of corporations represents the prime obstacle to empirical research in this area by sociologists. Sociologists have, for the most part, implicitly abdicated the study of corporations to economists, despite the fact that economists have only the most limited interest in the problems posed by organizational theory. This situation is truly paradoxical because, without a doubt, the modern corporation is the dominant organizational form of this century. However, it is equally important to note that there are certain difficulties with the application of the interorganizational paradigm to the large corporations. As one theorist astutely observed about large corporations, "the environment of most powerful organizations is well

controlled by them, quite stable, and made up of other organizations with similar interests, or ones they control" (Perrow, 1972:199). It is somewhat misleading to envision the large corporation as being adaptive to a turbulent and uncertain environment. As the empirical results on interlocking corporate directorates suggest, the large corporation appears to have achieved a certain measure of control over its environment.

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