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WHAT DO INTERLOCKS DO? An Analysis, Critique, and Assessment of Research on Interlocking Directorates

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ABSTRACT

Research on interlocking directorates has gained increasing prominence within the field of organizations, but it has come under increasing criticism as well. This chapter presents an in-depth examination of the study of interlocking directorates. I focus initially on both the determinants and the consequences of interlocking directorates, reviewing alternative accounts of both phenomena. Special attention is paid to the processual formulations implied by various interlock analyses. I then address the two primary criticisms of interlock research and evaluate the tenability of these criticisms. I conclude with a discussion of future directions for interlock research.

INTRODUCTION

An interlocking directorate occurs when a person affiliated with one organization sits on the board of directors of another organization. The causes and consequences of this seemingly minor, even innocuous event, have been the source of extensive debate since the Pujo Committee identified interlocks as a problem in the early twentieth century. Relatively simple to identify in publicly available information from highly reliable sources, interlocks have become the primary indicator of interfirm network ties. Research using interlocks flourished in the 1970s and 1980s, and with the explosion of research on interorganizational relations, it has become even more prominent in the 1990s. But despite its virtues, research on interlocks has always attracted its critics. Perhaps it

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is unsurprising that as the prominence of interlock research has increased, the frequency of criticisms against it have also increased.

Given the swirl of controversy surrounding interlock research, it is time for a detailed assessment of its contributions. In this paper I describe and evaluate the primary strands of work within interlock research. I deal with both the claims of interlock researchers and the criticisms leveled against the approach. I argue that, although they are not the answer to all questions about interorganizational relations, interlocks remain a powerful indicator of network ties between firms. When properly applied, I suggest, they continue to yield significant insights into the behavior of firms.

HOW AND WHY DO INTERLOCKS FORM?

All publicly traded corporations in the United States are required to have a board of directors of at least three persons. In most small, family-controlled firms, the board is likely to consist of the firm's president, some relatives and/or managers, and perhaps the firm's attorney and a few trusted friends. Large corporations tend to have boards with ten or more members; the size of boards has increased steadily since the 1950s. The typical board of a large firm consists of a range of inside and outside directors. Inside directors are those whose primary affiliation is with the firm and who usually include the firm's CEO and other top officers. Retired officers and (in some cases of long-standing family interest) stockholding family members are also included in this group. Outside directors are individuals whose primary affiliations are with organizations other than the focal firm. Most outside directors of large firms are officers of other large firms, especially financial institutions. They include bankers, insurance company executives, investment bankers, attorneys, accountants, and officers of firms in a variety of nonfinancial sectors. Many boards of the larger firms include so-called public directors, who represent groups such as civil rights organizations. Representatives of large external stockholders, including those involved in recent acquisitions of the firm, are also frequently represented on boards.

Interlocks are created by both inside and outside directors. A firm's inside directors, especially its leading officers, often sit on the boards of other firms. A study of 456 Fortune 500 manufacturing firms in 1981 (Mizruchi et al 1993) revealed that more than 70% of the firms had at least one officer who sat on the board of a financial institution. This does not include cases in which a firm's officers sit on the boards of other nonfinancial corporations. But most interlocks are created by a firm's outside directors. Any board member who is primarily affiliated with another firm automatically creates an interlock between the two organizations. The sum of the affiliations of a firm's outside directors constitute

the majority of its interlocks, which comprise about three fourths of all ties with financial institutions among the 456 firms in the above-mentioned study.

This automatic creation of an interlock is important to recognize because it means that interlocks need not be the result of conscious decisions by a firm's management to link the firms in question. It is therefore worthwhile to consider both explicit and inadvertent reasons for the formation of interlocks. Several have been stipulated, including collusion, cooptation and monitoring, legitimacy, career advancement, and social cohesion.

Collusion

Congressional investigations of interlocks dating back to the turn of the century have been concerned primarily with the effect of interlocks on the workings of the market. Prior to 1914, there were no prohibitions on who could interlock with whom. At the turn of the century, it was common for several firms within industries to share directors. The National Bank of Commerce, for example, shared directors with virtually every other major New York bank. Critics of big business argued that interlocks between competitors provided a means of restricting competition. Section 8 of the Clayton Act of 1914 expressly prohibited interlocks between firms deemed to be competing in the same markets. The number of interlocks among leading US firms dropped sharply after this point (Mizruchi 1982).

It is legitimate to ask whether interlocks between competitors actually facilitate collusion. The electrical price-fixing scandals of the early 1960s occurred long after interlocks within the industry were prohibited, and the Clayton Act prohibition on competitor ties did not deter numerous other price-fixing conspiracies that have been uncovered (Baker & Faulkner 1993). This raises the questions of whether interlocks between competitors were motivated by attempts to collude, whether they were effective in facilitating such collusion, or whether they were ultimately irrelevant.

Evidence on this issue has been difficult to identify. There are virtually no systematic data on firms' motives for interlocking. Instead, researchers have examined correlates and consequences of horizontal (within-industry) interlocks. Studies of US firms by Pennings (1980) and Burt (1983) examined the association between industry concentration and horizontal ties. Pennings found a positive association between the two, while Burt found an inverted U-shaped function, in which intraindustry interlocks were highest in industries with intermediate levels of concentration. This finding is consistent with the suggestion that, up to a point, concentration facilitates intraindustry ties but that the most highly concentrated industries, because of their small numbers of producers, have little need for interlocking in order to set prices. As for whether such ties improve firm performance, Pennings (1980:147–158) found virtually no asso-

ciation between a firm's interlocks with competitors and its profitability. Burt too found little association between within-industry interlocking and industry profitability once concentration was controlled. Carrington (1981), however, in a study of Canadian firms, found positive associations among concentration, interlocking, and profitability.

The fact that within-industry interlocks continue to occur suggests that some interlocks may have been established with the aim of restricting competition. There is little evidence that such interlocks are effective in this venture, however, or more importantly, whether interlocks are necessary to reduce competition. Perhaps for this reason, research on the anticompetitive effects of interlocks has virtually disappeared.

Cooptation and Monitoring

A less sinister interpretation of interlocking is that it reflects attempts by organizations to coopt sources of environmental uncertainty. This idea has spawned considerable research and continues to influence organizational theory. In his classic study of the Tennessee Valley Authority (1949), Selznick defined cooptation as the absorption of potentially disruptive elements into an organization's decision-making structure. Drawing on Selznick, Thompson & McEwen (1959) presented a hypothetical example of cooptation, in which a corporation invites onto its board of directors a representative of a bank to which the firm is heavily indebted. This example later became the subject of several studies. Works by Dooley (1969), Pfeffer (1972), Allen (1974), Bunting (1976), Pfeffer & Salancik (1978), Pennings (1980), Burt (1983), Ornstein (1984), Ziegler (1984), Galaskiewicz et al (1985), Palmer et al (1986), Mizruchi & Stearns (1988), Lang & Lockhart (1990), and Sheard (1993) all examined the extent to which interfirm dependence contributed to the existence of interlocks. Although the findings have been mixed, on balance they support the view that interlocks are associated with interfirm resource dependence.

These studies had at least two problems, however. First, because the authors lacked data on direct business transactions between firms, they were forced to measure resource dependence at the industry level and then either restrict themselves to industry-level conclusions (as in Burt's work) or infer back to the firm level from the industry-level data. In studies of financial dependence, for example, researchers hypothesized that firms with high levels of debt would have higher numbers of bankers on their boards. Because of the absence of lending data, these researchers were unable to determine whether the bankers on the boards represented the firms' lenders.

A second problem with these studies was that they were able to account for only a subset of a firm's existing interlocks. This problem was highlighted by a series of studies (Koenig et al 1979, Ornstein 1980, Palmer 1983) that

showed that the majority of interlocks broken accidentally (through the death or retirement of the person creating the interlock) among US and Canadian firms were not reconstituted within four years after the break. This suggested that, at best, resource dependence accounted for a minority of actual interlocks.

Does cooptation work? Do firms that have coopted sources of environmental uncertainty report higher levels of performance than do firms that have not coopted? Studies of the relation between interlocking and profitability have yielded a wide range of findings. Pennings (1980), Carrington (1981), and Burt (1983) found generally positive but slight associations between interlocking and profitability, although only Carrington's findings (based on Canadian data) were unequivocal. Meeusen & Cuyvers (1985), in a comparative analysis of the Netherlands and Belgium, found positive associations between financial interlocking and profitability in both countries, but negative associations between profitability and several types of "holding" interlocks (involving ownership) in Belgium. In a study of 266 US firms over a ten-year period, Baysinger & Butler (1985) found a positive association between a firm's proportion of outside directors and its profitability compared to its industry average. Fligstein & Brantley (1992), however, found a negative association between interlocks and profitability among a sample of large US firms.

The ambiguous nature of these findings may be a reflection of uncertainty over the causal order of the interlock-profitability association. Several studies have found that unprofitable firms are more likely to interlock (Dooley 1969, Allen 1974, Richardson 1987, Mizruchi & Stearns 1988, Lang & Lockhart 1990, Boeker & Goodstein 1991). Bunting (1976) found a curvilinear relation between the two: Up to a point, profitability increased with increasing interlocking; as interlocks continued to increase, however, profitability began to decline. Several authors have suggested, and interviews with bankers have confirmed (Richardson 1987), that bankers often join a board when a firm is in financial difficulty. Thus it is precisely when profits are lowest that interlocking may occur.

This finding points to an alternative interpretation of the basis for interlocking: an attempt to monitor (Aldrich 1979:296, Stiglitz 1985, Eisenhardt 1989). From the formation of US Steel and International Harvester at the turn of the century, in which every board member of both firms was personally approved by JP Morgan, firms have employed board seats as devices to monitor other firms. Large stockholders, bankers, and customers frequently expect to achieve board representation. This phenomenon has led some theorists to suggest that interlocks are instruments of corporate control. Researchers have identified links between stock ownership and board representation (Mizruchi 1982: Ch. 2; Berkowitz et al 1979, Burt 1983, Caswell 1984), and the finding that the appointments of bankers to a firm's board tend to follow periods of de-

clining performance (Richardson 1987, Mizruchi & Stearns 1988) is consistent with a monitoring perspective. Empirically, however, it is often impossible to distinguish monitoring, or influence-driven, interlocks from cooptation ones. In both cases, the interlock follows resource dependence flows. In fact, several researchers have suggested that cooptation and influence occur simultaneously in any resource dependence–based interlock (Pfeffer 1972:222, Allen 1974: p. 401, Pfeffer & Salancik 1978: pp. 164–65, Pennings 1980: pp. 23–24, Mizruchi & Stearns 1988: p. 195). Since, in the resource dependence model, control of resources is said to confer power on an organization, then the existence of a dependent firm will provide an opportunity for the exercise of power over that firm. One form of this exercise may involve the monitoring function that board representation entails.

On the other hand, both Pennings and Meeusen & Cuyvers suggest that outside directors prefer to join the boards of well-performing firms. This certainly makes sense from the perspective of the individual involved in the interlock, a point I address below. It is significant to note, however, that both an organization's preference to monitor poorly performing firms and an individual's preference to sit on the boards of well-performing firms could exist concurrently. If so, it would explain the inverted U-shaped function identified by Bunting. What remains unresolved here is the causal direction of the interlocking-profitability association. Both of these examples suggest that profitability (or lack of profitability) drives interlocking. Yet components of the resource dependence model suggest that interlocking promotes profitability. Exactly what interlocks do, and how they affect firm behavior, is an issue that we address at length below.

Legitimacy

Boards of directors perform an important function regarding the reputation of a firm (Selznick 1957, Parsons 1960). When investors decide whether to invest in a company, they consider the firm's strength and the quality of its management. By appointing individuals with ties to other important organizations, the firm signals to potential investors that it is a legitimate enterprise worthy of support. The quest for legitimacy is thus a further source of interlocking. In this formulation, firms are seeking not so much an alliance with another firm as the prestige that an association with such a firm may convey.

Legitimacy may also be a prerequisite for the securing of resources discussed in the previous section. A bank may be more willing to lend money to a firm if it believes that the firm is directed by reputable individuals (DiMaggio & Powell 1983). The probability of the bank lending money to the firm may thus increase if the firm already has bankers on its board.

Although the concept of legitimacy has always played a prominent role in organizational theory (Scott 1992), the legitimacy model has received little attention from interlock researchers. The model is difficult to test, and its predictions are closely related to those of the resource dependence model. Cooptation itself in part involves an attempt to gain the legitimacy that may be necessary for the acquisition of resources. The existing literature on board appointments certainly implies, however, that the quest for legitimacy underlies the formation of many interlocks.

Career Advancement

Interlocks occur between organizations, but they are created by individuals. A tie is often instituted at the behest of both organizations. Certainly the firm whose board an outside director joins is making an organizational-level decision to invite the person. But the outside director's decision to join may be the decision either of the firm or of the individual, or a combination of both.

Two studies (Stokman et al 1988, Zajac 1988) have proposed theories of interlock formation that treat interlocks in terms of the individuals who create them rather than from the perspective of interfirm relations. According to Zajac, individuals join boards for financial remuneration, prestige, and contacts that may prove useful in securing subsequent employment opportunities. The existence of interlocks is viewed as an inadvertent consequence of decisions made for reasons having little to do with the desire to link organizations. For a 20-year period among a sample of large Dutch firms, Stokman et al show that the vast majority of new director appointments were drawn from a relatively small number of persons with high levels of experience and expertise. They suggest, in line with Zajac's point, that these directors were chosen for their individual characteristics rather than for the organizations they represent. Useem, in his study of the inner circle (1984), develops a similar theme, suggesting that individuals who sit on multiple boards benefit from what he calls "business scan." As one executive told Useem (1984:47–48):

> You're damn right it's helpful to be on several boards. It extends the range of your network and acquaintances, and your experience. That's why you go on a board, to get something as well as give.... It just broadens your experience, the memory bank that you have to test things against.

From the perspective of the host organization, outside directors are chosen as individuals for a number of reasons (Mace 1971). First, firms want board members who will add prestige to their organization (see the discussion of legitimacy above). Among the largest firms, the majority of corporation-based outside directors are CEOs of their respective firms. Second, firms want board members

who are capable of providing input and advice, often on issues specific to already-identified corporate strategies. Third, firms want board members who are "good citizens," individuals known by reputation to be both conscientious and noncontroversial. Those most likely to meet the third criterion are people known to the CEO and other firm leaders, including those who are friends of the CEO. Outside directors, therefore, are often selected from within a relatively small circle of eligible individuals. As one director with representative views told Mace (1971:99):

> Here in Baltimore there is a relatively small group of leading businessmen who dominate all the principal company boards in the area. They are all fine men, they are public-spirited men, they have high standards and are widely admired. Individually and collectively their names are a credit to the boards they are on. They are friends of friends, and new board vacancies are filled from their ranks and their rosters.

These findings suggest that interlocks provide benefits to both the inviting firm and the invited outside director that are independent of specific relations between the connected organizations but are a function instead of the individuals involved. But this view is in no way incompatible with either of the interorganizational models described above. On the one hand, as in the cases described by Mace, it is likely that the interlocks created by these individuals are largely independent of relations between the firms themselves. On the other hand, specific individuals are often experts because of their organizational affiliations.[1] Therefore, the fact that an individual is a banker matters, even if the specific bank from which the individual is drawn does not. Even here, one must ask why a particular banker is chosen. This could be a result of a prior or ongoing business relation between the inviting firm and the bank, a friendship relation between leaders of the firms, or the lack of availability of alternative directors. All three of these cases involve factors related to social structural conditions: a business transaction between the firms; a social tie between the firm leaders; and a limited availability of suitable candidates as a result of already established obligations involving other firms. The career advancement models, therefore, are as much complements as alternatives to the interorganizational models described above.

[1]Directors who are heavily interlocked are more likely to be chosen for new board positions (Davis 1993). In fact, the severence of an organizational affiliation may render a given outside director less desirable. In an example cited by Useem (1984:39), an outside director of an insurance company was not renominated to the board after the retail firm of which he had been president was acquired by another firm. As a director of the insurance company told Useem, "The president suddenly was without a job; he devoted his time to working with the local art museum, but he didn't keep up with the business community because he hadn't any base.... His being on the board does not add anything."

Social Cohesion

An alternative to both the interorganizational and career advancement models is the view that interlocks represent social ties among members of the upper class. An early (and oft-quoted) statement of this position was presented by Mills (1956:123):

> "Interlocking Directorate" is no mere phrase: it points to a solid feature of the facts of business life, and to a sociological anchor of the community of interest, the unification of outlooks and policy, that prevails among the propertied class.

The model of interlocks as representing social ties is implied in Mace's findings as well. As one director told Mace (1971:99):

> Here in New York it's a systems club. They are all members of the Brook Club, the Links Club, or the Union League Club. Everybody is washing everybody else's hands.

Following Mills, several theorists, including Domhoff (1967), Zeitlin (1974), and Useem (1984), viewed interlocks as elements of capitalist class integration. Zeitlin (1976:900) proposed this position as an explicit alternative to the interorganizational model:

> Neither "financiers" extracting interest at the expense of industrial profits nor "bankers" controlling corporations, but finance capitalists on the boards of the largest banks and corporations preside over banks' investments as creditors and shareholders organizing production, sales, and financing, and appropriating the profits of their integrated activities (emphasis in the original).

The early analyses of interlock networks operated broadly within this framework (Levine 1972, Bearden et al 1975, Mariolis 1975, Sonquist & Koenig 1975, Mintz & Schwartz 1981, Mizruchi 1982, Scott & Griff 1984, Stokman et al 1985), although the extent to which these studies viewed interlocks as organizational- or class-level phenomena was often unclear. The issue of whether interlocks were primarily organizational or class phenomena was at the root of the first broken ties studies. For Koenig et al (1979), Ornstein (1980), and Palmer (1983), the frequency with which accidentally broken interlocks between firms were reconstituted was an indicator of the extent to which such interlocks represented significant links between the firms in question. The fact that the majority of broken ties were not reconstituted with the same firm suggested to these authors that interlocks were not primarily organizational phenomena. They inferred from this that the majority of interlocks reflected intraclass social ties rather than interorganizational resource dependence or control ties.

This interpretation, although plausible, was difficult to sustain because of its true-by-default character. Stearns & Mizruchi (1986) argued that even resource dependence–based interlocks will not necessarily be replaced with a tie to the

same firm (see also Pfeffer 1987). Some links will involve what they term functional, as opposed to direct, reconstitutions, in which a broken tie is filled by a tie to a different firm in the same industry as the previous tie. Even when functional reconstitutions were taken into account, Stearns & Mizruchi found that more than half of the broken ties they examined were not reconstituted. Still, their analysis suggested that the incidence of organization-based interlocks was higher than had been found in the earlier broken ties studies. Subsequent studies in this area moved from computing the frequency of broken-tie reconstitutions toward attempting to predict the conditions under which reconstitutions occur (Ornstein 1984, Palmer et al 1986). This contributed to the recognition that interlocks reflected both interorganizational and intraclass ties. A synthesis of the organizational and class models (Mizruchi 1989, 1992: Ch. 4) suggested that even ties developed for organizational purposes could have the consequence of facilitating interfirm political unity.

SO WHAT?: CONSEQUENCES OF INTERLOCKING

Whatever the disputes over the causes of interlocks, they pale compared to what I call the "So what?" question. If interlocks are to be worth studying, it is essential that they be shown to have consequences for the behavior of firms. Most of the analyses of the determinants of interlocks have implied various consequences. As collusive mechanisms, interlocks are assumed to facilitate communication among competitors. As mechanisms of cooptation, interlocks are assumed to pacify the resource provider's management. As monitoring mechanisms, interlocks are assumed to provide the monitoring firm with information on the receiving firm's operations as well as potential influence on its operations. And as reflections of social cohesion, interlocks are assumed to facilitate the political unity necessary for effective political action.

One difficulty in addressing this issue is the problem of how interlocks have been employed by various researchers. Some have treated interlocks as significant phenomena sui generis. The presence of an interlock is expected to actually affect a firm's behavior, even if all other conditions are identical. Others, however, have treated interlocks as representative of a more general social relation between firms. For these researchers, it is not the existence of the interlock per se that is crucial but the presence of a more basic tie between firms that the interlock is likely to reflect. As we shall see, researchers have not always been explicit about the meanings they have assigned to interlocks.

Interlocks and Corporate Control

The most explicit early studies to assume behavioral consequences of interlocks were those dealing with corporate control. After the publication of Berle &

Means's classic work, *The Modern Corporation and Private Property* ([1932] 1968), managerialism became the dominant model of corporate control. In this view, which held sway among US social scientists well into the 1970s, as corporations became increasingly large and stockholdings became increasingly dispersed around the turn of the twentieth century, control of the firm passed by default to the managers who ran the firm's daily operations. This separation of ownership from control was believed to have had a series of consequences for corporate behavior (less emphasis on profit maximization) and for the society as a whole (the dissolution of the capitalist class; see Mizruchi 1982:17–21 for a discussion of this issue). Dating back to the Congressional investigations of the early 1900s, interlocks had been viewed by some observers as a means by which control of corporations could be traced. The assumption was that a firm that had extensive representation of banks and other corporations on its board was subject to control by those institutions. In the 1970s, sociologists rekindled their interest in this topic.

Among the first sociological analyses to use interlocks to trace control was a work by Mariolis (1975). Examining the Fortune 800 from 1969, Mariolis employed network methods to examine the centrality of various types of firms, based on the assumption that highly central firms would be the most powerful. In a test of the hypothesis that the control of corporations in the United States was centered in banks, Mariolis found that major commercial banks were disproportionately represented among the most central corporations. Banks tended to have the highest numbers of interlocks with other firms and to be interlocked with other highly interlocked firms, the latter feature forming the basis of their high centrality.

Mariolis's study raised questions about the extent to which interlocks function as mechanisms of control. He acknowledged that banks might be able to control a firm, through such mechanisms as stock ownership (US bank trust departments frequently invest pension funds in nonfinancial corporations) and control of loan capital, even in the absence of board representation. It is also true (1975:426) that even the presence of two or three representatives on the board of a firm does not guarantee a bank control of that firm. Nor is it clear what difference such control would have for the firm's behavior. As with many pioneering studies, this one raised more questions than it answered.

Whether board representation is effective at all depends on the role of boards of directors. Although it is not well known, Berle & Means had actually defined management as the board ([1932] 1968:196), implying that directors, rather than officers, were the dominant force in management-controlled firms. By the 1950s, however, managerialists began to suggest that boards were mere tools of top management. Certainly there is a considerable amount of evidence

that boards of large nonfinancial corporations are largely passive and typically accede to the wishes of the CEO (Mace 1971, Herman 1981, Lorsch & MacIver 1989). On the other hand, simply because officers make most of the day-to-day decisions does not ensure that they, rather than the board, control the firm (Mizruchi 1983). A board that has been passive for many years while a firm performed well may find itself pressed into service when performance drops. It is not uncommon for boards to oust CEOs during periods of crisis (James & Soref 1981, Mizruchi 1983). In that sense, a firm with strategically placed representatives on the boards of a range of companies might in fact exercise considerable power in the corporate world, even if these board memberships do not ensure control over particular firms.

Building on this conception of interlock centrality as an indicator of general influence, Mintz & Schwartz (1985) developed a model of bank hegemony, in which banks exercise power not by controlling firms but by defining, through their routine actions, limits on the discretion of corporate managers. Mintz & Schwartz flesh out their model in their first five chapters, using theoretical argument and illustrations from the business press. They then turn to a detailed analysis of interlock patterns among US firms during the 1960s.

Some interlocks, Mintz & Schwartz suggest, fulfill one or more of the roles attributed to them by the theories cited above, primarily control or cooptation. But most interlocks, in their view, reflect not dyadic ties between firms but "instruments of discretion within a system defined by structural constraints" (1985:128). Interlocks may be driven by firms' information needs, as well as by personal ties between firm managers. As suggested above, they may also be driven by the directors' specific qualifications or experiences. Importantly, an interlock may simultaneously reflect two or more of these characteristics. A firm's need for information about a particular industry may lead to the appointment of a friend of the CEO from that industry who is also personally ambitious and views the outside directorship as a valuable career opportunity. "The most compelling interpretation of the overall network created by the collection of individual reasons for and responses to director recruitment is a general communication system" (1985:141).

The primary feature of the interlock network, in addition to the centrality of banks, is the predominance of representatives of nonfinancial corporations on the boards of banks. In Mintz & Schwartz's view, this reflects the desire of major players in the corporate world to participate in decisions about capital allocation (1985:151). Banks, meanwhile, by appointing directors from a wide range of industries gain valuable information about industry conditions and investment opportunities. Mintz & Schwartz suggest, then, that bank centrality results from the corporate officials' desire for influence over the allocation of

capital. The range of corporate officials on bank boards participates collectively, according to Mintz & Schwartz, in broad decisions about economy-wide capital allocation. Consistent with, although not explicit in, their model is the view that banks fulfill the function of mediating interfirm disputes so that business can approach the state as a unified political actor. The authors do not examine business political activity, however.

Because the Mariolis and Mintz & Schwartz studies were based primarily on cross-sectional data, which therefore provided no basis for comparison, it was impossible to determine the extent to which the networks they identified demonstrated a unified business community. To provide such a comparison, Mizruchi (1982) conducted a historical analysis of interlock networks at seven different points from 1904 through 1974. Claiming that the managerialist argument implied a declining level of cohesion in the US business community, Mizruchi showed that the density of the network of interlocks among 167 large firms declined sharply between 1912 and 1935 but stabilized and actually increased slightly thereafter. He concluded that business unity was a continuing phenomenon into the 1970s. As with the other studies, however, Mizruchi presented no evidence of the behavioral consequences of these networks. The comparative studies of interlock networks in 12 countries, compiled by Stokman et al (1985), likewise paid little attention to behavioral consequences of interlocks.[2]

Interlocks as Indicators of Network Embeddedness

By the early 1980s, interlock researchers had become increasingly aware of the need to study the behavioral consequences of interlocks. This realization coincided with the publication of Granovetter's (1985) important statement on network embeddedness. Granovetter argued that economic behavior, as with human behavior in general, is socially embedded; that is, economic actors are affected by their relations with other actors. It is these relations, more than abstract notions of norms or self-interest, that have the primary impact on economic behavior, he argued. This suggested that a range of firm behaviors—strategies, structures, and performance—could be affected by the firm's relations with other firms. Interlocking directorates, as the most widely employed measure of interfirm networks, provide a logical site from which to test the embeddedness model.[3]

[2]The study by Meeusen & Cuyvers in this volume was an exception.

[3]Gerlach (1992) has conducted an exhaustive study of Japanese keiretsu, business groups tied together by a system of interlocks and other formal relations. Uzzi (1996) has recently completed a study that employs detailed interfirm transaction data from the apparel industry to test the embeddedness model. Gulati (1995) has examined the determinants of a range of interfirm alliances, including joint ventures, R& D agreements, and technology exchanges.

In recent years, the emphasis on interlocks has moved increasingly toward their value as a communication mechanism rather than as a mechanism of control. This is reflected not only in the work of Mintz & Schwartz but also in that of Useem (1984). It is also implied by Granovetter's embeddedness model. Much of the research that attempts to identify the behavioral consequences of interlocks has thus treated interlocks as a communication mechanism rather than as a means of control. Nevertheless, evidence that the behavior of firms is systematically affected by social structures has only recently begun to appear.

One reason for the earlier paucity of behavioral evidence on interlocks was that it was unclear exactly what consequences interlocks were supposed to predict. Those who examined interlocks in terms of either collusion or cooptation implied that interlocks improved firm performance, including profits. As we saw earlier, the evidence for this association has been mixed at best. Those who examined interlocks within the corporate control tradition predicted either of two sets of outcomes. Interlocks were viewed as altering the behavior of firms, as, for example, forcing firms to transact business with some firms rather than others even if the latter provided more favorable terms. Or interlocks were viewed as indicative of business political cohesion, which was expected to increase corporate political power. For some theorists, the behavioral consequences of interlocks were unspecified.

Except for the few attempts to predict profits from interlocks, only two studies prior to the mid-1980s systematically examined the effect of interlocking on corporate behavior. These were Koenig's (1979) dissertation on corporate contributions to Richard Nixon's presidential reelection campaign, and Ratcliff's (1980) study of elite networks and lending behavior among St. Louis banks. In a study of Fortune 800 companies, Koenig found that firms that were centrally located in the interlock network were, ceteris paribus, more likely to contribute to Nixon's campaign. Ratcliff found, in a study of the lending activities of all 78 banks based in the St. Louis metropolitan area in 1975, that a given bank's number of interlocks with 350 St. Louis-based firms was positively associated with lending to corporations and negatively associated with mortgage lending.

Explicit or implicit in many of the interlock studies of the 1970s and early 1980s was the view that interlock networks among large corporations were indicative of the cohesion within the capitalist class, which helped solidify business into an effective, and dominant, political actor. Mizruchi's (1982) study of the evolution of the US interlock network during the twentieth century, referred to earlier, was an example of this work. After finding that interlocked directors were more likely to be active in various policy planning organizations (1979), Useem (1984) conducted interviews with interlocked directors in the

United States and Britain. Useem found a high level of political consciousness among these directors in both countries, suggesting that they formed a leading edge of the capitalist class, which he termed the "inner circle." Although Useem's study was a major advance, there remained a need for a systematic demonstration of the effect of interlocks on corporate political behavior.

By the mid-1980s, the newly available data on the campaign contributions of corporate political action committees (PACs) among US firms became a rich source of data on corporate political behavior. Just as the meaning of interlocks has been the subject of considerable debate, so has the meaning of PAC contributions. But most observers agree that corporate PACs take their contributions very seriously and that the contributions stand as legitimate indicators of a firm's political preferences (see Mizruchi 1992: Ch. 5, Clawson et al 1992 for detailed discussions and references on this issue). PAC data became a means to examine whether interlocks actually affected the political behavior of firms.

In one early formulation, Mizruchi & Koenig (1986) assumed that firms with similar PAC contribution patterns could be viewed as politically cohesive. If interlocking directorates contributed to political cohesion, they reasoned, then interlocked firms should have more similar contribution patterns than would noninterlocked firms. Unfortunately, although the other results of this pilot study were promising, the interlocking component yielded null and possibly even negative results. There was a small, negative association between the degree of interlocking between industries and the similarity of campaign contributions between them.

In a more systematic study, reported first in a series of articles (Mizruchi 1989, 1990, for example) and then fleshed out in detail in a subsequent book (1992), Mizruchi moved from the interindustry to the interfirm level of analysis, dealt with a more extensive data set, and incorporated a wider range of variables. In these works, Mizruchi found a consistent positive association between interlocking and similarity of contribution patterns. Interestingly, it was not so much direct interlock ties between firms but rather their indirect ties through financial institutions (situations in which two firms were interlocked with the same banks and insurance companies) that were associated with similar contribution patterns. Because firms with indirect ties have several common sources of information, this suggested the value of interlocks for what Useem (1984) called a firm's "business scan," its awareness of its environment. Mizruchi (1992: Ch. 7) also showed that, controlling for several other factors, interlocked firms were more likely than noninterlocked firms to express the same positions on political issues in Congressional hearings. These findings were the first to demonstrate a systematic link between interlocking and corporate political unity.

At the same time, organizational researchers were uncovering several findings that showed that interlocks were associated with a wide range of corporate strategies. Many of these did not deal explicitly with interlocks but were concerned instead with the composition of firms' boards, especially the number and/or proportion of outside directors. Because outside directors are a primary source of ties to other firms, however, studies showing the effects of board composition on firm behavior are highly relevant to the interlock literature. In one of the earliest such board composition studies, Cochran et al (1985) found that firms with high proportions of outside directors were more likely than those with high proportions of inside directors to provide top managers with "golden parachute" packages (lucrative severance agreements). Subsequent studies of golden parachutes by Singh & Harianto (1989) and Wade et al (1990) revealed similar findings. The authors of the first two studies had hypothesized that firms with insider-dominated boards would be more likely to provide golden parachutes because of the CEO's greater influence over insider-dominated boards. Wade et al developed a possible explanation for this paradoxical result, noting that the key issue may be the extent to which the outside directors were appointed during the particular CEO's reign. If so, they suggested, then even an outsider-dominated board would not be independent of the CEO. Unfortunately, the authors measured only the outsiders appointed after the appointment of the current CEO and ignored those appointed prior to the appointment of the current CEO. They did find, however, that CEOs with high numbers of outside board seats were more likely to receive golden parachute agreements, suggesting that integration into the interfirm social network (as described by Useem, Zajac, and Stokman et al) was associated with more favorable outcomes at the individual level. A study by Davis (1994) further confirmed this interpretation. As in the previous studies, Davis found a positive association between prevalence of outside directors and adoption of golden parachute plans. But a stronger predictor of golden parachute adoption in Davis's model was whether a firm was interlocked with a previous adopter.[4]

In a related study, Kosnik (1987) found that firms with high numbers of outside directors were less likely to repurchase their own stock at an above-market price (a takeover-prevention tactic known as "greenmail") than were firms with fewer outside directors. According to Kosnik, this finding suggested that firms with more outside directors were more effective. Kosnik (1990) replicated this in a subsequent study with an additional set of predictors. In a study of hospital boards, Goodstein & Boeker (1991) found that increases in the proportion of outside directors were associated with expansions of hospital

[4]Westphal & Zajac (1995) found that CEO compensation tends to be higher when CEOs are demographically similar to board members.

services. Davis (1991) found that firms were more likely to adopt "poison pill" takeover defenses (changes in bylaws explicitly preventing the firm from being acquired) when they were centrally located in interlock networks and were interlocked with firms that had already adopted poison pills. Palmer et al (1993) found, in a study of large US firms in the 1960s, that firms interlocked through non-officer ties with firms that had already adopted the multidivisional form were more likely to adopt the MDF during that decade than were firms without such ties.[5] D'Aveni & Kesner (1993) found that takeover attempts in which the top managers of both the bidder and target firms shared elite connections (including multiple directorships) were less likely to involve resistance than were takeover attempts without such characteristics. And Stearns & Mizruchi (1993a,b, Mizruchi & Stearns 1994) found a positive association between bank representation on a nonfinancial firm's board and the amount of external financing the firm employed.

On some issues, the association between interlocking and corporate strategies is less clear. In a study of campaign contributions during the 1982 election cycle by 443 large US corporations, Burris (1987) found no association between a firm's interlocks with 100 large US corporations and its tendency to contribute to incumbents, Republicans, or conservatives. Clawson & Neustadtl (1989), on the other hand, found, in a study of 243 US firms, that firms with high numbers of interlocks with a group of 250 large firms were more likely to contribute to incumbents and less likely to contribute to conservatives during the 1980 election cycle.

In studies of mergers and takeovers the findings have been similarly ambiguous. In a study of all takeover bids of Fortune 500 firms during the 1980s, Davis & Stout (1992) found no association between the presence of a banker on a firm's board and the likelihood of the firm being a target of a takeover bid. Fligstein & Brantley (1992) similarly found no association between bank interlocks and merger activity among 100 large US firms during the 1970s. On the other hand, in a study of large US firms during the 1960s, Palmer et al (1995) found that firms with interlocks with commercial and investment banks were more likely to be acquired in a friendly than a predatory fashion. Haunschild (1993), in a study of 327 firms in four US industries, found that firms whose officers sat on the boards of other firms that had recently engaged in acquisitions were more likely to engage in subsequent acquisitions themselves. And in a study of 120 large US firms between 1979 and 1987, Fligstein & Markowitz (1993) found that firms with bank officers on their boards were more likely

[5]Palmer et al also found, paradoxically, that firms with officer ties to prior MDF-adopters were less likely than firms without such ties to adopt the MDF. (See Palmer 1993:122–23 for an interpretation of this finding.)

to be targets of takeovers than were firms without bank officers. Fligstein & Markowitz suggest from this finding that bankers are often appointed to boards to encourage the sale of firms experiencing financial difficulties.

The Process of Embeddedness: An Example

It is clear from the studies cited above that a substantial and rapidly growing literature suggests that interlocks are associated with a wide range of corporate behavior. This evidence is not without some controversy; at least a few studies show no interlock effects. But a much larger number do reveal such effects. And all of the studies cited above could be used to support the argument that the behavior of firms is socially embedded.

As critics have pointed out (Hirsch 1982, Stinchcombe 1990, Davis & Powell 1992, Pettigrew 1992), however, very little is known about the processes through which interlocks might affect corporate behavior. The studies cited above rely on publicly available archival data, in which authors theoretically deduce causal hypotheses about the effects of interlocks or board structures in general and then examine these hypotheses with various regression techniques. Still, most of these researchers have worked hard to specify the processes implied by their models.

Any number of these works could be cited to illustrate this point. The work by Davis (1991) on adoption of poison pill takeover defenses provides a good example. Davis develops agency theory hypotheses to predict the likelihood of adoption. Because agency theory and network hypotheses are often similar (Mizruchi & Stearns 1994), Davis develops interorganizational hypotheses that he believes distinguish network formulations from agency theory ones. In addition to examining the proportion of outside directors (a variable predicted by agency theorists to influence board behavior; see Kosnik 1987), Davis predicts positive effects on poison pill adoption for two explicitly network variables: a firm's centrality in the interlock network and the extent to which a firm is interlocked with other firms that have already adopted. Both variables are strong predictors of poison pill adoption, providing powerful support to the network model.

The logic of Davis's argument is instructive. Network centrality, as reflected in interlock ties, is a form of social capital that provides access to information that flows through the network (1991:592). Heavily interlocked directors constitute a vanguard of the corporate elite, integrated into the community and often in the forefront of innovations. Poison pills were an innovation designed to limit takeovers that core members of the corporate elite viewed as dangerous. Thus, firms centrally located in the interlock network would be among the first to employ this innovation. A second component of the embeddedness argument is the process by which innovations spread. According to Davis (1991:593–94),

direct contact with an innovator helps clarify the value of the innovation. Thus, firms interlocked with current adopters will be more likely to adopt themselves.

Significant for our purposes is the role of interlocks in these hypotheses. Davis is not claiming that interlocks are the only means by which the corporate elite is integrated or by which information spreads among firms. He argues only that they are a mechanism through which information may pass. Would the diffusion of the poison pill have occurred as rapidly, or in the same way, in the absence of interlock ties? One way to answer this is to consider the variables that were controlled in Davis's model: proportion of inside directors; several variables related to stock ownership, including concentration of ownership and holdings by board members and institutions; number of prior adopters within the firm's industry; incorporation in either New York or Delaware (to control for legal idiosyncrasies); and several market and performance variables. Perhaps, had the data been available, Davis could have examined friendship patterns or geographic proximity among top corporate managers. Both variables would probably have been correlated with interlock ties, without the advantage of capturing the importance of corporate affiliation. Do the interlock patterns actually reflect a deeper set of social relations among members of the corporate elite? Perhaps they do, but no one has proposed an indicator that surpasses interlocks as a measure of social relations among firms. Davis's article provides convincing evidence not only that networks matter, but that interlock networks matter, and that they influence the behavior of firms.

INTERLOCKS AND LONGITUDINAL ANALYSES: CAUSE, CONSEQUENCE, OR BOTH?

Most studies of the consequences of interlocking have been cross-sectional in nature. Although for some of these, the proposed causal ordering is compelling and the reverse implausible, there are other studies in which it is less clear.

Consider our earlier discussion of the link between interlocks and profits, for example, with a few exceptions (Carrington 1981, Meeusen & Cuyvers 1985, Baysinger & Butler 1985), researchers have generally failed to find a positive effect of interlocks on firm profitability. A repeated finding, however, is a negative effect of profitability on interlocking. Low profits seem to invite interlocks, but interlocks do not appear typically to improve profits. Most studies of the interlock-profit link have been cross-sectional, however, and researchers have failed to consider the possibility that outsiders prefer to join the boards of well-performing firms (Meeusen & Cuyvers 1985, Stokman et al 1988, Zajac 1988). There have, nevertheless, been some longitudinal studies. Mizruchi & Stearns (1988), in a longitudinal study of the creation of interlocks

by 22 large US manufacturing firms, found that firms whose profits declined in a given year were more likely than those whose profits did not decline to appoint representatives of financial institutions to their boards. Lang & Lockhart (1990) reported similar findings in a longitudinal study of the airline industry. Using a cross-lagged panel model on 204 leading Canadian firms, Richardson (1987) examined, simultaneously, the effect of profits in 1963 on interlocks in 1968 and the effect of interlocks in 1963 on profits in 1968.[6] He found virtually no effect of interlocks on subsequent profitability. Consistent with the literature, however, he found that the effect of profits on interlocking was negative, in line with other studies that showed bankers tending to sit on the boards of unprofitable firms.[7]

Although Richardson's findings appear to solidify the earlier findings on the link between interlocks and profitability, in other areas even longitudinal data may not be sufficient to resolve interpretive disputes. In a study of 22 large US manufacturing firms between 1955 and 1983, Stearns & Mizruchi (1993a,b, Mizruchi & Stearns 1994) have examined the determinants of firms' use of external financing. One of their hypotheses, drawn from the embeddedness model, is that firms with representatives of financial institutions on their boards will be more likely than firms without such representatives to employ high levels of external financing. The findings support this hypothesis (Mizruchi & Stearns 1994).

This formulation contains a causal ordering problem, however. Although the presence of a banker on a firm's board may indeed have an independent effect on the firm's decision-making, the presence of the banker in the first place may be a consequence of the firm's strategy. One advantage of time-series data is that they should allow the analyst to avoid this problem: It must only be ensured that the presence of the banker on the board precedes the firm's borrowing, using a lagged dependent variable.

Unfortunately, it is not that simple. A firm's decision to borrow could have preceded both the borrowing and the appointment of the board member. For example, a firm may have decided in 1959 to embark on a long-term expansion

[6]The interlocks examined by Richardson were those directional ties (created by officers of one of the firms) accidentally broken in 1963 that had been reconstituted by 1968.

[7]Although their paper was not framed within the interlock literature, Baysinger & Butler (1985) also used a cross-lagged panel model to examine the relation between "board independence" (the proportion of outside directors) and performance. They found a positive association between a firm's proportion of outside board members in 1970 and its performance relative to its industry in 1980, but no significant association between performance in 1970 and the proportion of outsiders in 1980. As noted above, this is one of the few studies that showed a positive association between outside directors and profits. The ten-year time gap between the two panels in the study raises questions about the nature of the effects, however.

that would require large amounts of external financing. As part of this strategy, the firm in 1960 or 1961 appoints one or more bankers to its board. Then in 1961 or 1962 the firm's borrowing increases sharply. Did the interlock influence the borrowing, or did the borrowing influence the interlock? Or did the decision to borrow influence the interlock, which then influenced the specific character of the decision to borrow?

Notice that even if interlocking were a consequence of an initial decision to borrow, it is still viewed as significant by the firm's management. Notice also that to the extent that an interlock improves a firm's access to financing, it plays an important role even if it is part of a larger strategy. Still, it is undeniable that in the absence of detailed information about the firm's decision-making policies, the reasons for the interlock, and the process by which the interlock affects subsequent decision-making, the causal ordering will be difficult to untangle. In the Mizruchi & Stearns study, this was less of a problem because at a given point, financial representatives had been members of the board in question for an average of more than 12 years. This means that in the vast majority of cases, it is unlikely that a particular decision to borrow was part of a single strategy that involved the board appointment as well. But the larger issue raised by this study remains: What is the causal ordering between interlocking and corporate strategies? To what extent are interlocks the consequences rather than the causes of such strategies? After all, interlocking itself can be viewed as a strategy (Pfeffer & Salancik 1978). The factors that predict decisions to expand or restructure could affect decisions to interlock as well.

TWO CRITICISMS OF INTERLOCK RESEARCH

The basic criticisms of interlock research fall into two categories. The first type generally accepts the legitimacy of the use of quantitative indicators to predict corporate behavior but argues that interlocking directorates fail to account for these behaviors. The second type questions the use of quantitative indicators altogether and suggests that interlock analyses fail to capture not only the richness and complexity but even the general outlines of board dynamics and interfirm relations.

The first criticism, that interlocking directorates fail to predict corporate behavior, has been presented most forcefully in a recent article by Fligstein & Brantley (1992). Drawing on 100 large US industrial corporations between 1969 and 1979, Fligstein & Brantley hypothesize that interlocks with banks should be positively associated with corporate performance and debt/equity ratios. Fligstein & Brantley's findings revealed a negative association between bank interlocks and most measures of profitability. Although this finding ran counter to the authors' hypothesis, it is consistent with that of several studies

cited above and is thus not surprising. Bank interlocking did not predict strategic variables such as mergers or product strategies (related versus unrelated). Because the authors had presented no hypotheses for the effect of interlocking on these variables, the null findings prove little about the relevance of interlocks as a variable.

It is difficult to quarrel with the authors' statement that "We should abandon our concentration on boards of directors as a source of network data... *unless their possible relevance can be specified theoretically*" (1992:304, emphasis added). It would be a mistake, however, to assume from this study that interlocks "just do not predict much that is interesting in the strategic choices of firms" (1992:304). This fails to accord with the results of the numerous studies cited above, such as the works by Kosnik on greenmail; Cochran et al, Singh & Harianto, and Wade et al on golden parachutes; Davis on poison pill adoptions; Palmer et al and Haunschild on mergers; Goodstein & Boeker on hospital strategies; and Stearns & Mizruchi on corporate financing—not to mention the studies showing positive impacts of interlocking on profitability and those showing effects of interlocking on corporate political strategies, a topic that Fligstein & Brantley concede (1992:282) is beyond their scope. This conclusion is also contradicted by a study by Fligstein himself (Fligstein & Markowitz 1993) that showed that the presence of bank interlocks was associated with the likelihood of a firm engaging in merger activity during the 1980s.

Interlocks may not be useful in predicting every significant form of corporate activity, nor have they always proven to be as powerful as predictors as early adherents of their study prophesied back in the 1970s. But it is incorrect to claim that interlocks "just do not predict much that is interesting in the strategic choices of firms" (1992:304). The evidence that they do predict such choices is overwhelming.

The second criticism of interlock research, that interlock analyses fail to capture the richness and complexity of board dynamics and interfirm relations, has been made by several analysts. Among the most powerful statements have been those by Hirsch (1982), Stinchcombe (1990), Davis & Powell (1992), and Pettigrew (1992).

Although business researchers such as Mace (1971) and Lorsch & MacIver (1989) have conducted extensive interviews with corporate directors, Hirsch (1982) and Useem (1984) are, to my knowledge, the only sociologists who have systematically interviewed board members. Pettigrew & McNulty (1995) have begun systematic interviews with directors in large British firms. All three of these latter studies have addressed the topic of interlocks, but Hirsch in particular was sharply critical of interlock analysis. Hirsch asked board members about both the role of interlocks and the positions of bankers on

boards. He found in almost every case that directors considered their own power to be extremely limited, that interlocks were of limited significance for the organizations involved, and that bankers were viewed as wielding no particular influence as outside directors. Even actions as potentially benign as business transactions with a firm's interlock partners were assiduously avoided, according to Hirsch, because directors feared being cited by the Securities and Exchange Commission for conflicts of interest.

Hirsch's study raises several interesting questions. First, his finding of virtual unanimity on every issue raises the prospect that board members were conveying generalized norms about appropriate board behavior rather than more probing insights into the details of their activities. Second, even if Hirsch's respondents were entirely sincere, informant reports of their own power are notoriously unreliable. JP Morgan denied before the Pujo Committee that he held a disproportionate share of power within the American business world. David Rockefeller denied to Bill Moyers that he was any more powerful than the average American. It is possible to concede the difficulty of defining power in an objective manner yet still suggest that subjective reports are equally invalid. Third, results from a recent study (Mizruchi et al 1993) reveal that it may be incorrect to accept at face value board members' claims that they rarely do business with the firms with which they are interlocked. Among Fortune 500 US manufacturing firms in 1980 (the approximate period of Hirsch's interviews), nearly half (48.6%) of the cases in which representatives of a financial institution sat on the board of a manufacturing firm were accompanied by a business transaction between the firms. Hirsch is correct that there are numerous reasons that outside directors are appointed to boards and that these reasons often have little to do with specific relations between the organizations involved. But as we have seen, interlocks may have consequences for organizational behavior regardless of whether they were established for primarily organizational purposes.

Stinchcombe's (1990) primary criticism involves concern about what interlock ties actually represent. Because so little is known about the actual operation of interlocks, he suggests that we study "what flows across the links, who decides on those flows in the light of what interests, and what collective or corporate action flows from the organization of links, in order to make sense of intercorporate relations" (1990:381).[8]

This point is made more forcefully by Pettigrew (1992), whose critique is as much a commentary on quantitative research in general as on interlock research in particular. Criticisms of quantitative work for failing to capture the

[8]This critique by Stinchcombe was presented in a review of Mizruchi & Schwartz (1987). See Mizruchi & Schwartz (1991) for a reply to Stinchcombe's review.

complexity of human behavior have been around for decades, and it is not surprising that interlock research would be subjected to them. Pettigrew understates the extent to which interlock studies have addressed the "So what?" question, in part because he draws a distinction between board composition studies, which include several of those cited above, and interlock research: Despite their differing orientations and rhetoric, the two bodies of literature touch on many of the same issues. He also understates the findings on the consequences of ties even within explicit interlock analyses. But Pettigrew goes beyond mere restatement of these time-worn criticisms. In proposing detailed study of the selection and behavior of directors and top managers, Pettigrew suggests an emphasis on several levels of analysis, including the internal firm, interfirm, and societal levels, and a focus on the historical contexts that frame organizational decision-making (see Pettigrew 1990 for an illustration of how to conduct such an analysis and Pettigrew & McNulty 1995 for an example).

In making this argument, Pettigrew is treading on much the same ground as contemporary historical sociologists (Abbott 1992, Griffin 1993, for example) who are advocating the abandonment of a focus on variables for a refocus on historical narratives. Sociologists and organizational researchers have operated for several decades primarily within a mode of analysis that assumes that social behavior can be captured in terms of codifications (variables) that capture patterns of activities. Interlocks, one such codification, can be used to "explain" a firm's participation in mergers or the extent to which firms contribute to the same political candidates. Critics of variable analyses acknowledge that there are implicit narratives behind variable-based accounts (Abbott 1992:54–58). In fact, when one examines the development of variable-based hypotheses in academic journals, one sees descriptions of the social processes that the variables are designed to represent. Claims that these variables tend to be "decontextualized" in much sociological research may be true, but estimation approaches are increasingly available to capture the changing social context. Employing time-dependent covariates, it is possible to identify the changing nature of "effects," or processes, over time (Isaac & Griffin 1989). And an increasing number of approaches are available to handle statistically the fact that observations in social groups are often not independent (Krackhardt 1988, Mizruchi 1992: Ch. 5).

What Abbott and others are calling for is not only more attention to narrative, a detailed description of the processes that variables are presumed to capture, but also to systematic means of coding patterns in the narratives to permit generalization. Interlock research is ready for this kind of analysis. In fact, it ultimately will require it. The problem up to this point has been access to data on the operation of corporate boards. A small but growing number of scholars

in both the United Kingdom and the United States have conducted interviews with board members. It will be necessary for researchers in a variety of national settings to gain similar access to a wide range of organizations if we are to build a systematic process model of interlocks. In the meantime, researchers working within traditional paradigms will continue to assemble evidence that interlocks predict important organizational phenomena. One can ask for more, but one cannot fail to be impressed with what has been achieved.

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