CRIME BY COMMITTEE: CONSPIRATORS AND COMPANY MEN IN THE ILLEGAL ELECTRICAL INDUSTRY CARTEL, 1954–1959

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We show how cartels rely on the adaptive social structure of committee meetings to ameliorate the competitive difficulties of markets. We distill the structure of the cartel committee and test hypotheses relating market structure to committee structure and ultimately to the efficacy of cartel price-fixing. Cartel continuity and the corporate authority of the cartel are strong predictors of cartel effectiveness. Cartel continuity is responsive to market conditions that favor cartel formation. Centralization of cartel authority in decision making results in improved collusive pricing effectiveness. Centralization of cartel authority responds to expanding industry volume that bring about incentives to increase firm level market share at the expense of other cartel members.

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INTRODUCTION

A cartel is any collection of competitive corporate actors that pursue repeated, enduring collusive relations with one another—relations that

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result in restraint of trade—and, at the same time, lack a legitimate outside organizational authority to arbitrate and resolve disputes that may arise during the exchange. A cartel is a network form of organization (Podolny and Page, 1998; Powell, 1990) characterized by inter-organizational collaboration, a high degree of pattern in the ties among the nodes, a commitment between the parties to the pattern, and internal reliance on one another to arbitrate and resolved problems such as inflating sales forecasts, shifting expense-debt data, misrepresenting current revenues, hiding debt to make revenues look better (Elliott and Schrot, 2002), and dealing with chiseling and defection.

An illegal cartel is a criminal conspiracy designed to fix prices, allocate markets, deal with defection, cheating, and the alignment of company and cartel goals. Illegal cartels are inter-firm horizontal alliances between producers in the same industrial sector which managers from each firm secretly assemble on a temporary or short term basis (meeting to meeting) in order to accomplish specific objectives such as allocating market share, raising overall industry price levels, rigging bids, monitoring and sanctioning behavior, and engaging in repeated chains of cooperation and defection. To effectively raise prices above what market forces alone would produce, the cartel must continually adapt its social structure and culture to the demands of its market environment.

Price-fixing and market allocation is the crime of collusion by the illegal cartel to restrain trade and illegally allocate markets; it is instrumental and strategic (Paternoster and Simpson, 2001), committed to benefit the corporation or the division of a corporation, and “...punished by the state, regardless of whether it is punished under administrative, civil, or criminal law” (Chinard and Yeager, 1980:16).

Both industrial economists and criminologists have contributed to our understanding of the environmental factors which explain industry collusion. For example, industrial economists have explored explanations concerned with the linkages between industry structure and the resulting relations between suppliers. This model views industry wide economic and technical features as the primary mechanisms which effect the formation and outcomes of anticompetitive price-fixing efforts among rival suppliers (Porter, 1980a; Scherer, 1980; Sonnenfeld and Lawrence, 1978; Staw and Szwajkowski, 1975). Many criminologists have taken a similar approach. Criminologists view anticompetitive practices and trade violations as a corporate response to lagging profit performance resulting from such environmental factors as downturns in the business cycle, declining market share, and a general movement from munificence to scarcity (Simpson, 1986). In sum, both criminologists and industrial economists view collu-
Criminologists have contributed to our understanding of the role culture plays in cartel pricing policy. Price-fixing becomes “a way of life” among managers who secretly convene to allocate market share, raise prices, work out the details for future meetings, and justify their behavior to one another (Smith, 1961; Sonnenfeld and Lawrence, 1978:149; Denzin, 1977). For example, conspirators in the famous “Great Electrical Conspiracy” in the 1950s referred to their ritualistic attendance at price-fixing meetings as “choir practice” (Sonnefeld and Lawrence, 1978:149; U.S. Senate Committee on the Judiciary, 1961:16879-16884). Definitions favorable to violation of the law facilitate crime and increase its incidence among firms (Braithwaite, 1989). Moreover, research into the sensitivity cartel members have about the fine distinctions and alternative interpretations of moral boundaries provided by the wider culture has revealed important insights. One conspirator who testified under court oath illustrates the facilitating role that culture lends to the cartel through techniques of legitimation, “Illegal? Yes, but not criminal . . . I assume that a criminal action meant damaging someone, we did not do that” (Geis, 1967:122). Conspirators rely on culturally agreed upon and “reasonable” allocation of bids and markets developed by firms in the electrical industry (Geis, 1967:143). Sonnenfeld and Lawrence (1978) indict the “culture of the business” as an important cause of differential participation in price-fixing behavior by firms in the folding-box industry during the 1970s (Hochstetler and Copes, 2001:213). The internal organizational culture of the price-fixing firms plays an important role since the stance towards ethical conduct and compliance by top management of firms affects middle and lower management (Coleman and Ramos, 1998).

The social science literature has further explored other important research questions regarding price-fixing and illegal cartels. One additional set of questions regards the demography of cartels and this research estimates the number of ongoing price-fixing concerns and the economic environments they are likely to be found in (e.g., Hay and Kelley, 1974; Bryant and Eckart, 1991). Another set of research revolves around debates among economists narrowed to the theoretical “success” or “failure” of cartels (e.g., see Jacquemin and Slade, 1989; Sultan, 1974; Sultan, 1975). Both lines of research are interesting, but have their limits. The demographic approach, though addressing a very important question, leaves aside the question about whether cartels are effective. To this question economists have brought many tools of empirical and theoretical analysis. However, the success-or-failure line of research inevitably has some limitations as well.

There are methodological difficulties that confront the success-or-failure
paradigm. Both the skeptics of successful cartels as well the doubters of market mechanisms can in theory avoid any challenge to their hypotheses. For the market faithful who believe the market prevails over cartels, moments of cartel success are either an illusion or an aberration that will converge to market discipline and competition over time. This “in the long run” faith makes their “hunch” an untestable hypothesis. Conversely, those who fret over market failures and the success of cartels can always claim that successful cartels never get caught. That is, whatever sample we draw to show that a cartel failed, that sample would only be a sample of the “failed” cartels since the “successful” ones avoided detection. And how could we possibly discover the successful cartels that even the Justice Department and F.B.I. cannot detect?

Nonetheless, the question posed by the success-or-failure model remains an important one for those interested in corporate deviance and economic crime: are cartels effective? Without a satisfactory sample of cartels to work with, an indirect strategy to understand the effectiveness of cartels would be to begin to conceptualize and research the social tools available to the cartel. Unfortunately, little research has developed about what these social tools might be or how the cartel might arrange them differently through time to adapt to its market environment.

Although economists have identified structural conditions within an industry that favor cartel formation (Jacquemin et al., 1981; Porter, 1980b; Scherer, 1980; Sonnenfeld and Lawrence, 1978; Staw and Szwajkowski, 1975), they are inclined to treat the internal structure of a cartel as a “black box,” outside the reach of economic analysis (Scherer, 1980:225). Sociologists have urged criminologists and others to take up the problem (Shapiro, 1980; Simpson, 1986). Baker and Faulkner (1993) focused on the network structure of price-fixing conspiracies in the heavy electrical equipment industry in order to show how network centrality was necessary to maintain secrecy and communication among cartel members. While secrecy and communication are necessary conditions for a cartel’s existence and efficiency in reaching agreements, much remains to learn of the social structural tools available to the actors pursuing cartel formation. Moreover, the role of cartel adaptation over time still remains unexplored.

Beyond cartel culture there are many other aspects of social structure that remain to be researched. How does a cartel’s intra-firm authority structure play a role in price-fixing? Can the cartel adapt this authority structure by varying its allocation through time? What is the social structure of the face to face interaction among cartel members like? How does this interaction vary through the history of the cartel? Are these extra-cultural components of social structure effective in raising prices above what market forces alone might predict? What are the the feedback
mechanisms that cause the cartel to adapt its social structure to the market environment?

We build upon the prior works of criminologists and industrial economists. We suggest that the cartel is comprised of a series of committee price-fixing meetings embedded in a wider economic environment. We attempt to explicate the connection between industry wide economic forces and the structure of the cartel’s committees. We incorporate culture as a key component of cartel formation. We also explore the linkages between other facets of cartel social structure such as authority and the frequency of repeated interaction within the market environment. We show that industry wide economic factors are related to the adaptation of cartel structure, and this adaptive structure is in turn related to higher industry wide average prices.

CRIME BY COMMITTEE

Horizontal price-fixing and bid rigging, involving secret meetings among rivals, is not only the archetypical violation of antitrust law, it is the archetypical inter-firm organization of crime. Attendees at the meetings have social roles in three different social structures: intra-firm, inter-firm, and market. In the first structure, they are employees of their company and enact roles with their superiors and subordinates within their firm’s organizational hierarchy. In the second structure, the inter-firm cartel, they are co-conspirators with other committee members from rival firms with whom they have to coordinate their efforts in the inter-firm conspiracy. And in the third, they are executives and decision makers in a distinct stable “role structure” of firms, a setting in which they watch one another’s behavior. They observe one another’s volume and revenue decisions. They closely tabulate who gets what in the market, and then respond to the resultant pecking order (White, 1981). The cartel’s committees set pricing policies. The meeting attendees then reach specific agreements, monitor one another’s promises, talk to and discipline one another, and attempt to enforce compliance with policies about the allocation of customer bids.

Organizational sociology suggests the cartel’s pricing committees are instruments of executive control.

“Executives institutionalize tyrannies by controlling meetings. The higher ranks organize meetings in which problems and disputes of the lower ranks are ironed out. The organization chart serves as a constitution that specifies who will organize committee meetings. . .” (Stinchcombe, 1990:206).
Crime by cartel committee is conceived as a means for controlling competition among rivals. But because it mandates the fixing of published book prices and the resultant fixed order prices, the committee meetings turn out to be complex, time-consuming, and expensive. The clash of rivals over prices and bids force complaints up the chain of command to the division chiefs and their loyal deputies, resulting in an intervention of higher level company men in the affairs of the conspiracy. Cartels oscillate between a style of self-regulation familiar to students of professionals in bureaucracies (Freidson and Rhea, 1963; Freidson, 1975) and the "hierarchical" style (White, 1992:237-245) familiar to those who study colonial rule (Furnivall, 1948; Adams, 1996), tyranny in organizations (Stinchcombe, 1990:194-219), and corporate governance of large manufacturing firms (Chandler, 1962; Freeland, 1996).

The close interrelationship between the cyclical market demand-orders, backlogs, and book prices—with the distribution of decision authority in inter-organizational structures, and its impact on collusive prices, has not been pointed out before in the organizations literature (Cyert and Kumar, 1995). Excess capacity breeds incentives for crime by committee, but as the committee members meet and reach agreements together they learn from one another, and what they learn is that there is "leeway" in the bidding process. Opportunism is possible because the contacts to which they agree are execratory, one only knows if others are honoring their agreements upon opening the bids at a later date. Duplicity increases with improvements in the market. Fights break out over plum contacts. Cartel discipline starts to break down. At that point the corporate brass of the division have to be called in to get the committee members back on track. Decentralization of decision making yields to centralization. The conspirators may thus have created what they feared—price competition—by the very defenses they erected.

Not only is a cartel faced with the problem of keeping the action moving steadily towards the collective goals of its corporate members, it is faced with the problem of its individual representations reconciling the conflicting norms and demands imposed by participation in the conspiracy. Those engaged in price-fixing and allocation of bids in markets experience role conflicts arising out of their obligations to the cartel, and their colleague competitors from other firms, but to their individual division, their "home" base—where the careers, incentives and rewards are ultimately awarded to the individual. A pricing specialist and marketing manager, meeting with his counterparts from other companies, may find himself having a great deal in common with them. Their career aspirations, divisional pressures, and work demands may be highly similar; as professionals they share a work world and position in the industry. Over time they may come to identify with one another as colleague competitors, rather than
competitive rivals who are required to reach agreements on book prices and discount bids off of the listed industry prices. Given sufficient leeway and autonomy from their respective division heads, the “clan” may become something of a self-regulating subsystem within the cartel, a group of professionals in the company of equals. Self-regulating norms can emerge as they negotiate together, across many meetings, through time and on a wide array of different projects, requests for proposals from the power utilities. Norms of reciprocity emerge, and exchanges of bids and target offers take place in a frame of friendly cooperation rather than antagonistic rivalry. Quid pro quo replaces the driving of hard bargains and intractable positioning of one’s firm and division in the allocation of prices on projects. Such self-regulating cabals inside the cartel tend to practice non-enforcement of the rules for illegal behavior. Or they punish so discreetly that the internal actions being sanctioned by the group of equals are winked at and, in effect, condoned rather than condemned. A system of live and let live permeates the meetings of the decentralized specialists. They may even take pride in deflecting the criticism of high level authority and working out arrangements amongst themselves to avoid the scrutiny of the division general managers and their lieutenants.

At some point the “quid pro quo” comes to the attention of the division brass. Looking closer at the firm's profit margins and less at the process by which industry stabilization of prices has been achieved by their lower ranking personnel, division chiefs may order their employees to stop “horse trading” with the competition, announce their upcoming presence at meetings, actively intercede in the affairs of the cartel, and decree by fiat that order prices are at unsatisfactory levels and that controls have been too lax in the working group. The coordinated activity of this working group of specialists are then realigned and forced in a new, and for them unwanted direction. They are ordered into new meetings and told what to do in terms of book prices, order prices, discount prices, and prices that will result in the appropriate market share for the three firms. They are now told to get into meetings together and to coordinate their behavior in a certain way. In fact, it appears that in the great electrical conspiracy, powerful members representing the firm and the upper level policy group of the division use their power to maintain conditions of solidarity. Compliance can be and is coerced across organizational boundaries by division general managers and the second in command lieutenants who are then sent into the meetings to urge the following of policy level orders, to cajole their own subordinates, and, of course, to remind them of the firm level incentives behind compliance. These incentives are intended to encourage career aspirations within the division, and hence discipline and commitment.
THE DYNAMICS OF CARTEL FORMATION

To implement a successful pricing project, a cartel needs to both rely on its existing market structure as well as to put its own social organization into action. Structure and action must be brought together in time to obtain the following ends: (1) the cartel members must locate each other in a market in order to exchange rights over bids made by buyers of their commodity; (2) they must reach agreements over the nature of the lowest bid, which company has rights to be the lowest bidder, and so forth; (3) cartel members must design sanctioning mechanisms to assure adherence to such understandings.

These two components, market structure and the social organization of the cartel, vary and unfold through time to comprise a dynamic pricing project. Figure 1 presents the dynamics of a cartel. We conceptualize three analytical moments of time within a cartel, arbitrarily referred to as \( t - 1, t, \) and \( t + 1. \) First we outline the market structural elements cartel members must address in order to meet their pricing objectives. Next, we consider how these market structural elements are intervened by the social organization of the cartel.

LOCATING IN THE MARKET

The main objective of a cartel is to attempt to escape market forces. As such, cartel members meet with each other under market pressures. Managers assemble to set prices because the market has proven to be unsatisfactory. Collaborative pricing is their hoped for remedy. However, the collaborative spirit takes place under conditions of rivalry. The habits of market competition may produce a cheater on pricing agreements. As such, market forces can be a source of both collaboration and competition. It is how these forces are managed by the cartel that determine if prices will be sustained above market value.

BACKLOGS OF UNFILLED ORDERS

Most of the economic forces affecting a cartel come from anticipating the future of a firms economic health. One such measure of this future is backlogs of unfilled orders. Backlogs of unfilled orders are beneficial to suppliers since they represent a stockpiling of orders which helps smooth out the manufacturing process. Cyert and Kumar (1995:11) argue “sustaining the collusive (monopoly) price is easier if... firms are capacity constrained... if there is excess capacity... stealing market share from rival firms is very attractive.” However, Khan (1968:321) argues the opposite: “excess capacity and subnormal profits do strengthen the incentive to bridle competition.”
We argue that both of these economists have a causal view not appropriate for understanding prices under cartel formation. Economic forces do not directly affect prices under cartel arrangements. Rather, economic forces affect prices indirectly through the properties of the cartel’s social action.

Present Prices

If anticipated future demand is a meaningful source of pressure for conspirators, present demand for their products is as well. While backlogs measure how “busy” a factory will be in the future, current prices measures how busy a factory is in the present. When a cartel is not in place, an underutilized factory prompts managers to cut prices in order to gain contracts. However, we believe that it is a mistake to posit such a direct causal pathway between present market forces and prices during cartel arrangements. Rather, poor pricing arrangements in time t - 1 bring about
social action on the part of the price-fixing conspirators at time $t$ which in
turn ultimately raise prices at time $t + 1$.

Figure 1 shows our anticipated pathways between the cartel’s anticipated future market demand, their present situation of market demand, social action, and ultimately, prices. It is difficult to discuss the paths in detail at this point since we have not had the chance to discuss some of the other concepts. However, one can see from Figure 1 the possibilities of positive pathways to success for a cartel given the market pressures to chisel and cheat on pricing agreements. This leads to our first hypothesis.

**Hypothesis 1:** *The net effects of the pathways of present market demand and anticipated future market demand are related to higher prices due to the intervening effects of the conspirators social action.*

**REACHING AGREEMENTS**

In trading bid position and production levels with one another the cartel elaborates and institutionalizes its own *rules of exchange*, collective understandings of “who can transact with whom and the conditions under which transactions are carried out” (Flingstein, 1996:658; North, 1978). For example, a norm regarding the maintenance of historical relationships between a particular supplier and buyer was the basis of claiming bidding priority in the steam turbine conspiracy. In the same cartel, General Electric, the market leader, “yielded market share in cyclical downturns in the turbine generator business to avoid severe price deterioration and took the share back in cyclical upturns” (Porter, 1980b:105).

To reach pricing agreements, cartel members must spend a fair amount of time discussing the allocation of bids within the industry and the prices they shall set. The more fully problems of allocation are discussed at meetings of the cartel members, the more likely the allocation of prices and production levels will reflect a set of rules for dividing up the market that cartel members find equitable. Moreover, full discussion of prices and production levels increases the likelihood that agreements reached will be clearly understood and members will commit to carrying them out, since the mere occurrence of social interaction can build expectations of faithfulness (Simmel, 1956). For these reasons, Figure 1 shows positive pathways from cartel consensus to cartel effectiveness, which we define as the difference between administered prices and competitive prices, i.e., the difference between prices set or allowed by the cartel and the prices that would obtain if the cartel members were in competition with one another.

**Hypothesis 2:** *The greater the extent to which conspirators form a consensus over the allocation of bids, the greater the cartel effectiveness.*
MOBILIZATION OF CARTEL MEMBERS

For most cartels, members will need to meet frequently in order to reach agreements, depending on the complexity of the market situation and the difficulty of reconciling competing claims for bids or quotas. Attendance at the meetings will also affect the quality of the agreements that are reached. Thus, frequently held, well attended meetings constitute a major resource for a cartel. Joint attendance by all cartel members at all meetings in a planning or bidding cycle will assure that agreements are judiciously arrived at, with full consideration given to all competing claims for bids. In addition, and equally important, the density of interaction that develops at consistently attended meetings will increase awareness of and commitment to generalized reciprocity (Ekeh, 1974; Gouldner, 1960) among cartel members, a sentiment that fosters voluntary compliance with cartel agreements. Figure 1 shows a number of direct and indirect ways that cartel mobilization may bring about higher prices.

Moreover, conspirators that repeatedly attend committee meetings are more likely to be ensured that all companies are willing to respect the prior agreements, and work on future deals together. This is because as continuity of attendance increases, the conspirators are typically involved in what is called a repeated game. From meeting to meeting, from deal to deal, the degree to which the same corporate managers from company A confront the same corporate managers from companies B and C increases the chances of cooperation. The role of repeated agreements in ongoing meetings, or repeated plays in situations of potential conflict, has long been recognized in economics and political science.

Hypothesis 3: The greater the extent to which cartel members jointly attend each and every pricing meeting, the greater the cartel effectiveness.

SANCTIONING MECHANISMS

The crucial issue facing a cartel is that agreements, once made, must be kept. To be effective the cartel must detect cheating as soon as it occurs and punish offenders swiftly. Cartel leaders may specify a number of ways that price levels are to be set above market levels. For example, in the steam turbine conspiracy, General Electric, the industry and cartel leader, set the prices for turbine components (the “book” price) and urged cartel members to stay within five percentage points above the book price when preparing their bids. General Electric further insisted that cartel members not alter its method of funding purchases through “progress payments” made before product delivery.
CONFLICT, DISSONANCE, AND ANTAGONISM

The tension between competition and cooperation within a cartel often produce conflict and antagonism over accusations of cheating and back-tracking on agreements. One method to resolve such conflict is to come to terms over new rules of group behavior (Coser, 1960). Not only might conflict result in new rules of group behavior, but action is energized in and through the committee when implicit agreements and promises are not kept. For example, Whyte (1943) found that an underlying “system of mutual obligations” was “fundamental” to group cohesion of a street group, noting that “it is only when the relationship breaks down that the underlying obligations are brought to light.”

But conflict alone cannot produce new and effective rules for group action without the social structure to make such rules more than false promises. In order for conflict to raise cartel based prices, conflict must activate otherwise dormant social tools at the cartel’s disposal. One such social mechanism the cartel members may call upon to ameliorate their internecine antagonism is the authority structure of their corporations.

We hypothesize that conflict and dissonance usher in a renewed commitment to fundamental cartel goals (i.e., raising prices). In addition, conflict forces the cartel members to invent improved methods to arrive at terms of agreement. Finally, conflict among the conspirators results in forcing higher ranked members of the cartel’s corporations to participate; these high ranking managers bring the social tool of authority to facilitate the cartel’s ability to meet its goals. For these reasons, we hypothesize the following relationship between conflict and prices under cartel conditions.

Hypothesis 4: The net effect of conflict on cartel prices is positive due to the intervening effects of the cartel’s ability to mobilize its social resources.

CENTRALIZATION OF CARTEL AUTHORITY

The sustained effectiveness of a cartel depends crucially on its governance structure. Cartel members must adhere to the agreements that are reached, and when they do not, the leadership of the cartel must be able to react swiftly and authoritatively. We maintain that the source of the cartel leaders’ authority derives from the positions they hold in their respective firms. Top ranking members from participating companies form the governance structure of the cartel. The role of top managers is to introduce new policies and practices, in this case, those of the cartel, within their respective firms. Further, without their unified intervention to counteract cheating, adherence to cartel agreements will rapidly evaporate, and the cartel, if it does not disband, will cease to administer prices effectively.

In most cases cartel agreements are negotiated by middle managers
from the participating companies. Sales managers and pricing specialists possess the knowledge about prices, costs, sales history, etc., needed to reach an agreement as to who will bid for what job or what price will be set for what goods. But junior managers rarely undertake a price-fixing conspiracy on their own. At the very least, they interpret directives from top management to do whatever it takes to increase profits as a signal to engage in collusion with competitors (Sonnenfeld and Lawrence, 1978). Without explicit guidance and direction from top management it is doubtful that middle managers have the resources to stop cheating once it starts because they lack the authority to impose effective sanctions on offenders. They can denounce the cheater and refuse to negotiate with him/her further, but these moves will seldom change the cheater’s behavior. The more likely effect of such a response is to reduce the price-fixing effectiveness of the cartel.

Top level managers can act effectively to stop instances of cheating by middle level managers. They use the authority of their position within their firm (not within the cartel) to punish the offender. Thus intra-organizational lines of authority are a resource that top managers draw upon to translate corporate power into cartel power.

Top managers can punish middle managers who cheat, but they can also command middle managers to cheat. That is, they can easily be the source of cheating in a cartel. Even if they did not authorize cheating, they must agree with the other top managers participating in the cartel that a given instance of cheating in their firm must be punished.

We believe that the top level managers are held in line by a single, dominating member who has the power to inflict severe harm on all other members of the cartel. Cartels typically occur among a small number of firms in a concentrated market (Hay and Kelley, 1974). The market leader is often in a position to engage in cutthroat competition with sustainable losses to itself but unacceptable losses to the remaining firms in the market. This threat falls short of the “mutually assured destruction” that occurs when trust is breached, because the sanction does not “impose an irrationally high cost on the enforcer” (Bradaeh and Eccles, 1997). It does threaten to end the cartel, but more than that, the promise of renewed competition threatens to bring cartel members back to a period of price instability even worse than that which gave rise to the cartel. In short, the threat serves to remind the top level managers of the need for the cartel and thereby persuade them to re-commit to it.

Finally, the market leader more than any other firm benefits from the cartel. This is what prevents the market leader from cheating or failing to sanction cheaters within the market. Inter-firm cartels bring price stability to an industry although participants may not see enhanced profits (Asch and Seneca, 1976). In oligopolies tacit collusion is the norm (Cyert and
Kumar, 1995). Oligopolies are most likely to transform into cartels when one firm dominates the market. At the same time, the market leader does not hold monopoly power. It does not have sufficient resources to meet the entire market demand. Therefore, it has an interest in seeing that the other firms in the market succeed. It can in times of difficulty cede market share to these firms, thereby demonstrating to them it has wider concerns other than its own well being (Porter, 1980b:105).

In sum: The market leader enacts governance laterally across the top ranked members of the cartel. Then governance is exercised vertically within participating companies from their top level to middle level managers. Governance occurs principally in the negotiations that take place in meetings of top level managers. Therefore, we expect a high level of involvement of corporate rank and authority at meetings to be associated with high prices.

**Hypothesis 5:** The greater the involvement of corporate authority in the cartel's efforts, the greater the cartel effectiveness of raising prices.

**DATA**

We chose the steam turbine conspiracy of 1954-1959 in the electrical industry (Herling, 1962; Lean and Ogur, 1982; Porter and Ghemawat 1980; Porter 1980a, 1980b; Sultan, 1974; Sultan, 1975) to illustrate the above theory of cartel structuration. Abundant economic (Sultan, 1974; Sultan, 1975) and archival data from the Chicago Law School Library are available for this study, enabling us to correlate cartel structure with cartel effectiveness.

The case of turbines is a strategic case by defining it theoretically and by demonstrating its "causal connections to a hypothesized general process" (Walton, 1992:129) of inter-firm social control by managers as conspirators; and by "making the case" (Ragin, 1992:118-120) that the turbine price fixing operation is "...reconceived as an empirical instance of something... previously misapprehended" (Walton, 1992:129).

While the case-study approach used here to study social control and pricing fixing offers advantages over past research in this area, the in-depth approach to a single industry conspiracy introduces a few methodological issues that must be considered. The most important methodological issues in this industry case-study of inter-firm crime are questions of strategy and generalizability. We identified a "strategic case" that we judged to reflect the various processes that are typically cited in the literature on inter-firm collusion. This led us to focus on the case of a highly complex manufacturing business (as opposed to a simpler and more standardized industrial product), in which we could observe managers going
through the process of meeting, making pricing policies, setting targets, and dealing with defection. The case presented here fits this profile nicely. We argue that the unique circumstances surrounding the organization and control of illegal inter-firm work provides an exceptional opportunity to develop a strategic test of the “cartel break down” thesis or theory.

The issue of generalizability is critical and care has been taken so that the so-called threats to external validity have been minimized. First, many of the patterns discovered in this case involving managers and their illegal pricing policies look unremarkable when compared with the growing literature on corporate crime. Second, we conceive of the conspiracy in turbines as a best-case study because of the extraordinary legal and economic details that were developed by the U.S. government investigators. The turbine conspiracy involving these three firms might be empirically rare in the richness of the economic and social data, but this allows us to trade external validity for internal validity. Put differently, the analytic gains from getting inside the “black box” of the steam turbine meetings and the divisional managers outweighs the loss in generalizability to other divisions in the electrical business as well as to other industries.

We have no illusions to definiteness, however; arguments for generalizing from this case to price fixing effectiveness and processes in other industries must rest on theoretical grounds.

Archival data were collected by examining more than 30 volumes of court depositions conducted by the federal government during evidentiary procedures for the civil law suits and criminal prosecution of those involved in the electric turbine price-fixing from 1954 - 1959 (U.S. Senate Committee on the Judiciary, 1961:16879-84). Government lawyers asked cartel participants the location, date, details of discussions, and the names of other conspirators in attendance at the meetings. Prosecutors submitted as evidence hotel receipts, corporate travel logs, and the personal calendars of the cartel members as well. Prosecutors used this evidence to reconstruct attendance at the meetings as well as other details of the price-fixing. The vast majority of the records of attendees at a given meeting were corroborated by at least one other cartel member, and often with some other form of submitted evidence as well.

Meetings referred to in the government depositions were coded for the analysis. We recorded: (1) the nature of the contact and the means of communication employed; (2) the date and place of the meeting; (3) details of discussion; (4) the companies with or to whom the communication was made and the name, position and address of the persons acting on their behalf; (5) any agreements, understanding or plans resulting therefrom; and (6) any details on the recruitment of a new cartel participant. As the volumes of depositions were read, the data collection often entailed going
back to a code sheet previously developed for a meeting, and noting the corroborating testimony of the attendees by other cartel member.

We coded 144 meetings attended by 43 executives and managers in the steam turbine industry held during the 21 economic quarters from the fourth quarter of 1954 to the end of 1959. We matched these data with economic data on the electric turbine industry from the same quarters collected by Sultan (1975). We chose to analyze this period, because a reading of the depositions made it apparent that it contains the cartel members' best recollection of the events and is the period for which the government had the strongest and most detailed evidence related to the meetings.

MEASURES

PRICES

Price is defined as the average order price of large steam turbines for each of the economic quarters. Sultan (1974) compiled the prices of every order received by General Electric, Westinghouse, and Allis-Chalmers, averaged them over economic quarters, and indexed them to prices in the 1961 handbook of prices all three companies used in preparing bids. Thus, price is measured as one hundred times the ratio of the average price of turbines in a given quarter to the average 1961 handbook price of the same turbines. Prices in this "order price index" ranged from a low of 67.6 in the first quarter of 1955 to a high of 120.0 in the third quarter of 1958. The mean price over the 21 periods in the study was 94.7.

Two sets of independent variables condition prices during periods of collusion. One set represents economic forces, while the other set represents the internal structure of the conspiracy. Economic forces are represented by the price predicted by Sultan's (1975:105-111) model over a period of 48 quarters, beginning in the second quarter of 1951 and ending in the second quarter of 1963. The 21 quarters when the conspiracy was active, the fourth quarter of 1954 through the fourth quarter of 1959, are included in this period, but were purposely not included in the econometric model in order to estimate the effect of the conspiracy on prices.

Sultan predicted the average order price using an Ordinary Least Squares regression analysis. Sultan's model employs the following variables: (1) the smallest backlog of unfilled orders for large steam turbines among the backlogs of the three major firms in the conspiracy, (2) the rate of incoming orders, (3) the distribution of total industry orders, and (4) the rate of inflation. We employ Sultan's predicted value of the average order price for large steam turbines, the "predicted price index", to estimate
what prices would be if collusion did not take place during the 21 economic quarters when the cartel was operative. We will refer to the predicted price index as the “competitive” price. The order price can then be thought of as:

Order Price Index = Competitive Price + Structure of Collusive Efforts + Error.

In the above equation the Predicted Price Index has a coefficient of 1.0 because we want to examine how much collusive efforts raised or lowered the average order price above or below market value. Accordingly, to further refine the dependent variable the predicted price index is moved to the left side of the equation. The resulting dependent variable, price difference, can be thought of as:

Order Price Index - Competitive Price = Structure of Collusive Efforts + Error.

ECONOMIC STRUCTURE

Sultan (1975) constructed a measure of backlogs of unshipped orders, measured in years, by dividing the amount of turbine production to be fulfilled, measured in kilowatts, by the company’s manufacturing capacity, also measured in kilowatts. To predict order prices Sultan used the smallest backlog of the three colluding companies, because in a competitive environment, the company with the smallest backlog is likely to bid most competitively and bring the market price down. In the presence of a conspiracy we argue backlogs play a somewhat different role. Small backlogs favor cooperation while large backlogs favor competition. We found that this effect is the same for each company. Consequently, we employ total backlogs to predict non-compliance with the conspiracy. Total backlogs are measured as the sum of quarterly backlogs of all three cartel members. From the fourth quarter of 1955 to the fourth quarter of 1956 a strike at Westinghouse limited its participation in the conspiracy. The total backlogs measure does not include the backlogs of Westinghouse during this period. Total backlogs averaged 6.3 and ranged from a minimum of 4.2 in the last quarter of 1955 and the first quarter of 1956 to a maximum of 9.1 in the third and fourth quarters of 1957.

SOCIAL STRUCTURE

We measure the structure of the cartel members’ collective efforts through four variables corresponding to the four elements of cartel structure identified in our hypotheses. In somewhat different order these are: (1) the centralization of cartel authority; (2) an index measuring the extent to which the cartel members established a consensus; (3) an index measuring the extent to which the meetings were occupied with a level of voiced
antagonism and conflict; (4) and an index measuring the extent to which the meetings of cartel members were attended regularly and consistently.

The managerial rank of an individual cartel members was measured using three levels. Company vice presidents are considered to be of “rank three,” where three is the highest rank. General managers of steam turbine divisions were coded as “rank two,” the middle rank. Sales managers were coded as “rank one,” the lowest rank. This coding is consistent with the charts of corporate hierarchy published by the electrical manufacturers during the period of the price-fixing. To measure the extent to which corporate authority is involved in the conspiracy at each quarter we calculate the average rank of cartel members who attended meetings that quarter. On average the mean quarterly rank was 1.47 (about half way between the lowest and middle rank) indicating that the bulk of attendees at the meetings were from the lower ranks. Average quarterly rank ranged from a low of 1.25 in the fourth quarter of 1954 and the first quarter of 1955 to a high of 2.0 in the fourth quarter of 1957.

We measure the continuity of attendance through the following method. For each quarter, let $M$ be a square matrix where the columns and rows of the matrix represent cartel members. Further let the diagonal of $M$ elements represent the count of meetings attended for each cartel member and let the off diagonal elements represent the number of meetings each dyad attended together. The following operations are then carried out:

$$t = \frac{\sum_{i} \sum_{j} M_{ij} - \sum_{i} M_{ij}}{n \times (n-1) \times r}$$

where $M$ is the above described matrix, $n$ is the number of cartel members attending meetings in a given quarter, and $r$ is the number of meetings. The numerator of the above measure is a count of the number of dyads actually present at all meetings that quarter. This numerator is compared to the maximum possible number of dyads found in the denominator. Values approaching one represent quarters in which more and more of the cartel members went to each and every meeting together. Values closer to zero represent an economic quarter where there was little joint attendance among the cartel members (i.e., the probability that individuals go to separate meetings becomes higher). The mean level of collaboration among the cartel members is .37, with a minimum of .05 in the first quarter of 1958 and a maximum of 1.0 in the first and second quarters of 1955 and again in the second quarter of 1956.

We used principal component analysis to construct indices of the extent to which the cartel members established a consensus on price-fixing tasks or became involved in conflict about accusations of chiseling and cheating.
Under deposition, government attorneys asked cartel members about the
details of the meetings. For each meeting a summary description was
taken. These summary descriptions were then coded to indicate whether
the following events occurred at a particular meeting. (1) Whether the car-
tel members voiced agreement on some price-fixing task or issue. (2)
Whether there was a discussion of an upcoming turbine contract. (3)
Whether there was some discussion of targets regarding industry wide
pricing. (4) Whether there was conflict or disagreement over some price-
fixing policy or issue. Finally, (5) whether accusations regarding a parti-
cular company's violation of past pricing agreements were voiced.

It was determined that two underlying principal components account for
most of the correlation structure among these measures. The first prin-
cipal component is primarily dominated by the variables indicating agree-
ment and the discussion of jobs and prices. Issues of conflict,
disagreement, accusations, and prices largely dominate the second prin-
cipal component. We interpret the first factor as an index of the extent to
which the cartel members spent their time reaching agreements. We refer
to this factor as an index of consensus. We interpret the second factor as
an index of the extent to which the cartel members devoted time and
energy arguing and hashing over opportunism and how to sanction such
opportunism. We refer to this second principal component as an index of
conflict.

At the level of individual meetings, the consensus and conflict indices
have, by construction, a mean of zero and a standard deviation of 1.0. We
used the quarterly average of tasks and norms in the analysis. As quarterly
averages, the mean of conspiracy tasks is .042 (s = .480); the mean of con-
spiracy norms is -.091 (s = .347).

METHOD OF ANALYSIS

The data for this study are a collection of observations over time and as
such can be examined using a time series analysis. The analyses carried
out to describe the cartel members' efforts consist of a number of regres-
sion equations. Ordinary Least Squares regression is often inappropriate
for such analyses, particularly if the independent variables along with the
dependent variable are not stationary processes but instead possess some
trend or adjustment component to their behavior. Autocorrelation among
the residuals in ordinary least squares analysis results in biased estimation
of standard errors, and thus invalid tests of significance. We used Prais-
Winsten (1954) regression to estimate both autocorrelation and regression
coefficients. The standard errors of the regression coefficients were recal-
culated using the "sandwich" estimator of White (1980, 1982) to adjust for
heteroscedasticity and possible specification errors.
A full model of five regression equations is needed to show how market forces and elements of the conspiracy's social structure both directly and indirectly determined the effectiveness of the conspiracy. We present a system of equations in which the economic factors of competitive price and backlogs affect both price difference and the social organization of the conspiracy. The model also shows how some social organizational factors affect others. For example, conspiracy consensus and conspiracy conflict both affect attendee rank. The interrelations among the variables show how the conspiracy was able to maintain itself in the face of economic pressure to resort to competition.

The size of the sample, 21 economic quarters, and the presence of autocorrelated disturbances made it necessary to estimate the coefficients of each of the five equations separately. Thus, it is not possible to assess the overall fit of the model, as would be done in covariance structure modeling. Although there are only two exogenous variables, total backlogs and predicted price index, the model is identified, because it is recursive.

**FINDINGS**

**QUALITATIVE OVERVIEW**

**DYNAMICS OF COLLUSION**

The dynamics of the conspiracy changed with time and necessity. The meetings for the Turbine conspiracy took place regularly, although at some instances more often than others. For instance, meetings took place during the National Electrical Manufacturing Association (NEMA) national convention. During these dates, meetings were recorded to take place in the morning and afternoon, and sometimes even again in the evenings. Therefore, the information exchanged in these meetings was more dense and important than the other meetings due to the unique continuity, meaning it was possible for the game to change slightly with every new decision or information exchange that took place.

The conspiracy changed as the people did. Different members of the cartel brought different ideas and bones of contention to the bargaining table. Division general managers were involved setting industry pricing goals, such as staying within a certain percentage of published book prices of steam turbines. Middle level managers were involved with significant number of financial and engineering details required to submit the phony bids. If disagreements over past bids arose, the conflict among the middle level managers was limited to strong accusations, but division general managers could, and did, threaten disciplinary action.

The economy also had a large role on the price-fixing. If the economy was in a recession, as it was in 1957, it became more critical to meet and organize the players to ensure a fair allocation of contracts. When there
were lots of contracts up for grabs, the competition was more lax, because everyone was able to get a cut, however, as contracts dried up, the three firms had to try and bite at anything, and desperate times called for desperate measures. It was in fact, during early 1957 that the division chiefs began to get involved. The leaders of these firms that participated in the conspiracy surely found it beneficial to share the prey and all survive, instead of trying to fight to the death for slim pickings.

Changes Over Time

We found three main phases of cartel formation. In phase one, the cartel is relatively open, the conspirators are completely comprised from the ranks of middle level management. The conspirators meet regularly and there is virtually no record of conflict or discord among the colleague conspirators. In phase two, the cartel begins to experience conflict, discord, and antagonism. Division chiefs become involved and start attending meetings among themselves as well as with the middle level managers. Phase three shows an increase interaction among the conspirators, greater number of meetings, greater involvement of division chiefs, and a large number of new actors beginning to participate in the cartel; the cartel becomes unwieldy.

Data show that meetings 1 through 46 are relatively quiet. The players are mostly the same at each meeting. Peters and Neblett from General Electric, Eikner and Mauntel from Westinghouse, with Miers and Nairn from Allis-Chalmers are the middle level managers that form the original core members of the post "White Sale" cartel. At a couple of the early meetings, there are other representatives from the three big companies, and also some people from smaller companies, such as Darling and Reinking from Worthington, and Sellers from Eliot.

During this early stage of the conspiracy, the repeated interaction between the players begins to solidify the cartel. None of the division chiefs are in attendance at the meetings. The meetings take place approximately twice a month, but most times they are held every two weeks. The continued communication between players and collaboration is the perfect breeding ground for reputations to be created and comfort to be enjoyed. The colleague conspirators are getting to know one another, and the more often they meet with each other, more trust and less suspicion abound.

But then something happens. On June 1, 1957, at meeting 46, phase two of the conspiracy begins. This is the first meeting where division heads are present. Division general managers including Ginn from GE, Rowland from Westinghouse, and McMullen from Allis-Chalmers are all at the

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2. The "White Sale" refers to a period when the industry experienced severe price competition.
meeting, and strangely, few of the lower level managers are there. From this point on, the top-level executives take an active role in the conspiracy.

Meetings from 46 to 120 show more active involvement with the division chiefs. Ginn and McMullen specifically work hands on with the lower level managers. It is assumed that during this period of time, the top executives stay on hand to regulate, prevent chiseling, and punish cheaters. Also during this time the density of meetings increases, meaning an increase in interaction among the conspirators. Cartel centralization of authority increases as well. A period of heightened regulation now characterizes the cartel because the increased interaction and additional cartel participants—especially the division general managers—provides more opportunity to monitor the behavior and actions of others. However, the increased vigilance does not last forever, and around meeting 120, the conspiracy reverts to its original pattern of middle manager domination. Division chiefs drop into meetings at times, but it is the lower level representatives that make the decisions once again.

Centralization of Cartel Authority

In early 1957 meetings were held to discuss two important public utility turbine construction projects that were coming up for bid. General Electric argued that because it was the industry leader and had a past history of dealing with this particular utility manager and purchasing officer, it should be awarded, on both projects, approximately $15 million dollars for each 500,000-megawatt turbine. High ranking managers with expertise as pricing specialists and engineers were continually involved in negotiations among the suppliers, because they alone possessed the technical knowledge required by this complex project to make the case for their company. These “technicians” worked together to coordinate the separate bidding levels of their order prices so as to simultaneously raise the value of the “winning” bid while working out fictitious “competitive” high bids from Westinghouse and Allis-Chalmers. They agreed to send three separate sealed bids to the public utility managers, ordered as follows from the highest to lowest bid: Allis-Chalmers, Westinghouse, and General Electric.

When the utilities opened the bids, Allis-Chalmers was declared the winner with the lowest bid. Apparently, one of Allis-Chalmers’ executives decided to bolster Allis-Chalmers’ profits by subverting the cartel’s agreement. A slimmed down bid was submitted by Allis-Chalmers. This bid included generous provisions making the final order price the least expensive of the three. Controversy and anger broke out immediately at the next set of meetings. The top-level executive from General Electric’s division was particularly alarmed and angry. At a meeting of conspirators from the three companies he accused two Allis-Chalmers representatives
of backtracking on their promises. All the cartel members present immediately requested a review of the bid proposals. Upon inspection, the details of Allis-Chalmers cheating were clear. The head of sales for Allis-Chalmers had quietly drafted a provision in his firm's bid deducting the finance charges to be borne by the utility customer while two huge turbine machines were being designed and manufactured. Allis-Chalmers had apparently waived the charges for testing and license approval as well.

More galling to General Electric and Westinghouse was the fact that previous negotiations on these so called financial "progress payments" were time consuming. The conspirators left these meetings convinced that they had in hand some rules and guidelines for handling complex financing arrangements when preparing sealed bids. By "not insisting on progress payments," said General Electric, Allis-Chalmers had challenged the cartel. Moreover, Allis-Chalmers had engaged in unjustified and materially misleading behavior and, by implication, sent a market signal to the public utilities that turbine manufacturers were willing to absorb some of the costs of financing as part of their competitive strategy in the legitimate market for turbines. Insider opportunism such as this could spur the utilities to bring pressure on all cartel members to lower their order prices. Allis-Chalmers' moves came as the cartel's collaborative efforts had improved the way firms were preparing their bids. The new problem of compliance undermined trust in those collaborative efforts and threatened to jeopardize industry stability.

In response, the Vice President and General Manager of the Turbine Division of General Electric, started to dictate terms to his counterparts. For General Electric, this incident of defection from cartel plans was not an isolated occurrence, nor was it a simple struggle over market share between the industry leaders of General Electric, Westinghouse, and the weaker Allis-Chalmers. The "progress payments" crisis had undermined the mutual understandings among the dominant firms that there was an implicit status order, an order in which some firms are more dominant than others. That the third and weaker member of the cartel, Allis-Chalmers, had been making inroads into the share of orders normally reserved for the stronger two firms was of primary concern. When confronted by General Electric's general manager about his lack of cooperation and diligence, Allis-Chalmers top level representative stood up and said he would run his company "any damned way I please." With that he walked out of the meeting.

Allis-Chalmers' lower level sales managers exhibited weak attendance in subsequent meetings but quickly picked up the pace of their attendance soon thereafter. Progress payments continued to be a simmering issue after the dust up in the highly contentious and rancorous middle period of the late 1957 and early 1958 meeting series. Relationships were strained.
At one point the general manager from General Electric turned to the representatives of the other companies and told them that if they continued to indulge their taste for chicanery, General Electric was prepared to "destroy the turbine market itself" through instituting an all-out price war in turbines. Threats such as these by the industry leader and the highest ranked division chief at General Electric had an impact on the representatives. Stabilization of prices followed, incidents of noncompliance dropped, and quarterly order prices rose. The cartel was back on track, for the time being.

REGRESSION ANALYSIS

Price

We measure the effectiveness of the conspiracy by the difference between actual and predicted prices, actual price index minus predicted price index. Figure 2 tracks both indexes over the five years of the conspiracy. We see that for most quarters actual prices were higher than the prices predicted by Sultan's model. If competition alone were operative during this period, the average difference between actual and predicted prices should be zero with actual prices fluctuating randomly above and below predicted prices. As a test of this hypothesis, Sultan (1975) estimated the model for all 48 quarters between 1951 and 1963, including the 20 quarters when the conspiracy was active, and then added a dummy variable to indicate the period of the conspiracy, but the coefficient of the conspiracy dummy was not statistically significant. However, when the model is re-estimated without including the conspiracy quarters (Sultan, 1975:107), the mean difference between actual and predicted price, 4.27, is significantly greater than zero (t = 3.38, p = .003) and in 16 of the 21 quarters actual prices run above predicted prices. In short, there is evidence from Sultan's data that the conspiracy was effective. It was, to be sure, not uniformly effective. The degree of effectiveness fluctuates across the five years of its life we examine here, but overall it is effective. A quantile plot shows that the difference between actual and predicted price fluctuates almost normally around its mean of 4.27.

MODELING RESULTS

Table 1 presents the five equations that show how the cartel was effective. The dependent variables under regression modeling are placed in the columns of the table while the independent variables are placed in the rows. Price difference, our measure of the cartel's effectiveness, is predicted by three of the five measures of conspiracy structure, cartel mobilization, centralization and consensus lagged. When the cartel members
Figure 2  Actual and Predicted Price During the Conspiracy


fully attended meetings, thus establishing a high level of cartel mobilization, prices rose above market value in following quarter ($b = 10.11, p < .001$). The higher the level of cartel centralization of authority, the more likely pricing agreements were to be implemented ($b = 25.58, p < .0001$). Consensus regarding pricing policy in time $t$ led to higher prices in time $t + 1$ ($b = 3.25, p < .01$).

Cartel centralization of authority is predicted by conflict ($b = .37, p < .001$) and consensus ($b = -24, p < .001$). Consistent with hypothesis six, conflict in time $t$ triggered a higher level of cartel centralization in time $t + 1$. The lagged effect of a consensus among the conspirators on attendee rank shows that centralization of authority is less of a factor during periods
Table 1. Regression Equations Describing Efficacy of Turbine Capacity

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Mobilization of Cartel Members</th>
<th>Conflict</th>
<th>Centralization of Authority</th>
<th>Cartel Effectiveness (Actual Price - Competitive Price)</th>
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<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
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<td></td>
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<tr>
<td>Mobilization</td>
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<td>−2.10†</td>
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<td>10.11†</td>
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<td>(lagged)</td>
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<td>(.64)</td>
<td></td>
<td>(2.60)</td>
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<td>Mobilization Squared</td>
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<tr>
<td>(lagged)</td>
<td></td>
<td>(.64)</td>
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<td></td>
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<td>Centralization of Authority</td>
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<td>−.52*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(lagged)</td>
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<td>(.25)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centralization of Authority</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Conflict</td>
<td></td>
<td>−.18†</td>
<td></td>
<td>25.58‡</td>
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<tr>
<td>(lagged)</td>
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<td>(.06)</td>
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<td></td>
<td>.37‡</td>
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<tr>
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<td>(.09)</td>
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<td>Consensus</td>
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<td>3.25*</td>
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<tr>
<td>(lagged)</td>
<td></td>
<td>(.06)</td>
<td></td>
<td>(1.74)</td>
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<td>Competitive Price</td>
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<td>.017‡</td>
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<td>Index (lagged)</td>
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<td>(.005)</td>
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<td>Realized Demand</td>
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<tr>
<td>(Backlogs)</td>
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<td><strong>Model Statistics</strong></td>
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<td>Constant</td>
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<td>1.61†</td>
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<td>(.51)</td>
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<td>−.18</td>
<td>−.29</td>
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<tr>
<td></td>
<td>.88</td>
<td>.56</td>
<td>.42</td>
<td>.48</td>
</tr>
<tr>
<td>F statistic</td>
<td>65.54†</td>
<td>17.53‡</td>
<td>13.07†</td>
<td>1089.26‡</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>12.03*</td>
</tr>
</tbody>
</table>

1 Standard errors in parentheses. *p < .1  **p < .05  †p < .01  ‡p < .001  ‡‡p < .0001

when the lower level managers are able to come to terms on pricing agreements.

Discussions about terms of agreement or the frequency of attempts to establish a consensus among the cartel members are more likely to occur when competitive prices are low ($b = -.017$, $p < .005$). Total backlogs predict the level of conflict, dissonance, and antagonism at meetings ($b = .13$, $p < .05$). Backlogs cause a level of friction among cartel members.

Market conditions influence cartel mobilization. When market demand (indicated by competitive price, i.e., the predicted price index) is high, conspirators are likely to form a consensus about the operation of the cartel ($b = .017$, $p < .005$). When market demand is low, conspirators are strongly motivated to attend meetings and thus mobilize the cartel ($b = .017$, $p < .0019$) to ensure they will get an appropriate share of available orders.

**PATH MODEL**

A path model diagram of the electrical conspiracy, shown in Figure 3, summarizes the dynamics of the social action of the conspiracy. The
regression coefficients are presented in Figure 3 in standardized form so that the magnitude of the different effects can be compared with one another. The path diagram shows that cartel centralization of authority has the largest effect on cartel prices ($b = 1.02$), followed by mobilization of cartel members ($b = .62$) and attempts to arrive at pricing consensus ($b = .26$).

**Figure 3  Path Model of Cartel Efficacy**

Consistent with hypothesis one, Figure 1 shows that market pressures have a positive effect on prices due to the intermediate effects of the cartel member’s social action. The effect of backlogs of unshipped orders runs through two indirect paths in its relationship with prices. One path begins with backlogs increasing conflict ($b = .62$), while conflict causes centralization of authority to go up ($b = .60$), and then centralization of authority results in an increase in prices ($b = 1.02$). The total effect of backlogs on prices via this path is $.62 \times .60 \times 1.02 = .38$. Another path shows backlogs affecting conflict ($b = .62$), with conflict then reducing the mobilization of
cartel members across meetings \((b = -.80)\), and then mobilization increasing prices at time \(t + 1\) \((b = .62)\). The total effect of backlogs on prices via this path is \(.62 \times .80 \times .62 = -.31\). The net effect of the pathways from backlogs of unfilled, through measures of social action, and to cartel prices is \(.38 + (-.31) = .07\). This positive coefficient is consistent with hypothesis one.

Hypothesis 1 not only predicted that anticipated future market demand would raise prices due to the conspirators social action, but current market demand would have similar effects for similar reasons as well. We see that there are three pathways beginning with present competitive industry prices and ending in collusive prices. One such pathway shows competitive prices at time \(t + 1\) reducing cartel mobilization \((b = -.18)\) at time \(t\), while mobilization at time \(t\) is related higher prices at time \(t\) \((b = .62)\). The total effect of present competitive prices on cartel effectiveness via this path is: \(-.18 \times .62 = -.11\). Another pathway relating present competitive prices to cartel effectiveness begins with competitive industry prices at time \(t - 1\) predicting a decrease in consensus, harmony, and cooperation at time \(t\) \((b = -.60)\), while consensus at time \(t\) predicts a decrease in cartel centralization at time \(t + 1\) \((b = -.55)\), with centralization of authority then predicting cartel effectiveness at time \(t + 1\) \((b = 1.02)\). The total effect of backlogs on prices through this path is: \(-.60 \times -.55 \times 1.02 = .34\). A third pathway connecting competitive market conditions to cartel effectiveness begins with present prices at time \(t - 1\) predicting a decrease in consensus among the cartel members at time \(t\) \((b = -.60)\), while consensus and cooperation at time \(t\) then predict higher prices at time \(t + 1\) \((b = .26)\). The total effect of backlogs on prices via this path is: \(-.60 \times .26 = -.16\). Considering the net effect of competitive prices on cartel effectiveness through all these paths yields: \(-.11 + .34 + (.16) = .07\).

If we sum the total indirect effects due backlogs \((b = .07)\) plus the total indirect effects due to present competitive prices \((b = .07)\), we obtain a total effect of .14, which implies a positive effect due to market forces on cartel effectiveness by means of social structure of the cartel’s collective action. Hypothesis 1 is supported by the path diagram.

Hypothesis 2 predicted that a consensus among the cartel members would result in higher cartel prices. The path diagram presents two pathways showing how cartel consensus is related to cartel effectiveness. A direct relationship exists between an index of cartel consensus formation and cartel effectiveness \((b = .26)\). Moreover, an indirect path relates consensus at time \(t\) to lower levels of cartel centralization at time \(t + 1\) \((b = -.55)\), and ultimately cartel centralization leads to higher prices at time \(t + 1\) \((b = 1.02)\). The total effect of this path relating consensus to cartel effectiveness is: \(-.55 \times 1.02 = -.56\). If we combine the two effects for the paths leading consensus among cartel members to cartel effectiveness we obtain
.26 + (-.56) = -.36. This does not support hypothesis 2. Interestingly, consensus nullifies its direct effect through a larger indirect effect through which consensus causes the high ranking cartel members to mistakenly believe their participation is unnecessary, thus lessening their involvement which is crucial to the success of the cartel.

Hypothesis 3 predicted a positive relationship between cartel mobilization and cartel effectiveness. The path diagram presents two pathways showing how cartel mobilization is related to cartel effectiveness. A direct relationship exists between mobilization of cartel members and cartel effectiveness \( (b = .62) \). Moreover, an indirect path relates mobilization at time \( t - 1 \) to conflict, dissonance, and antagonism at time \( t \). Interestingly, we found a significant quadratic term parameterizing the relationship between cartel mobilization at time \( t - 1 \) and conflict, dissonance, and antagonism at time \( t \). This implies too little mobilization results in little conflict as their is not enough density of interaction to produce many issues to disagree over; while too much density of interaction results in a cacophony of voices and information noise and ultimately dissonance and conflict. The total effect of quadratic equation linking mobilization at time \( t - 1 \) to conflict and dissonance at time \( t \) is \( b = .56 \). Conflict in dissonance in turn are related to centralization of cartel authority \( (b = .60) \), while cartel authority ultimately leads to higher prices \( (b = 1.02) \). The total effect of mobilization of cartel members through this path is: \( .56 \times .60 \times 1.02 = .34 \). The total path effect of cartel mobilization on cartel effectiveness is thus: \( .62 + .34 = .96 \).

Hypothesis 4 predicted that the indirect and direct conflict pathways would have a net positive effect on cartel effectiveness. There are two pathways that start with cartel conflict, dissonance, and antagonism and end with cartel effectiveness. One pathway starts with conflict at time \( t \) leading to higher cartel centralization at time \( t + 1 \) \( (b = .60) \), and then cartel centralization at time \( t + 1 \) predicting higher prices at time \( t + 1 \) \( (b = 1.02) \). The effect of conflict through this pathway is: \( .60 \times 1.02 = .61 \). A second pathway starting with cartel conflict and leading to cartel effectiveness begins with conflict predicting cartel mobilization \( (b = -.80) \), while mobilization in turn predicts cartel effectiveness \( (b = .62) \). The effect of conflict through this pathway is: \( .62 \times -.80 = -.47 \). The total path effect of conflict on prices is thus: \( .61 + (-.47) = .14 \). The positive total path effect supports hypothesis four.

Hypothesis 5 predicted a positive effect of centralization of cartel authority and cartel effectiveness. There are two complete pathways leading cartel centralization of authority to higher cartel prices. The first pathway begins with cartel authority at time \( t - 1 \) predicting a reduction in conflict at time \( t \) \( (b = -.32) \), then conflict predicting an increase in centralization of authority in time \( t + 1 \) \( (b = .60) \), with centralization of authority
then predicting higher prices \((b = 1.02)\). The effect of conflict at time \(t - 1\)
on prices through this path is: \(-.32 \times .60 \times 1.02 = -.20\). A second path way starts with centralization of authority at time \(t - 1\) predicting a negative relationship with conflict at time \(t \ (b = -.32)\), with conflict predicting a lower level of cartel mobilization at time \(t\), and finally mobilization having a positive relationship on prices at time \(t + 1 \ (b = .62)\). The effect of conflict on prices through this path is: \(-.32 \times -.80 \times .62 = .16\). The paths thus suggest a mix of indirect effects that centralization of cartel authority has on cartel effectiveness. However, the direct relationship between centralization of authority at time \(t + 1\) and cartel effectiveness remains the strongest contemporaneous effect.

**DISCUSSION**

The dual allegiance to division and market force the cartel to manage a delicate balance between collaboration and rivalry. This tense juggling of loyalties, expectations and responsibilities is carried out within a social space composed of two contradictory social roles: one role regarding in-group closure among intra-firm hierarchies while the other regarding the cartel’s expectations and responsibilities as an inter-organizational entity. Ascendancy of the firm role leads to withdrawal from out-group commitments and to separatism. That is, on the firm side of the dual role set, too high regard for intra-organizational loyalty can lead to a level of inter-organizational rivalry that simply results in market competition and market prices. However, blindly following the expectations and responsibilities of the cartel role is not a solution either. Ascendancy of the cartel role leads to over-diffusion of attachments, excessive concessions, attenuation and withering of divisional loyalties, a false sense of trust in co-conspirators and with it an erosion of internal monitoring and self discipline, and lack of adequate concern for intra-organizational authority structures and policies. Thus the difficulty facing the cartel is that it must nurture both inter- and intra-firm commitment and bring them to a delicate balance. When firm interests predominate, discord and conflicting commitments threatens the continuity of the cartel in meetings, in bids, in promises. On the other hand, when cartel interests predominate, needed divisional resources such as loyalty and authority are likely to decline in their effectiveness, leaving the cartel with a weaker set of needed social resources, for example. Thus, a delicate combination of cartel orientation and divisional orientation militates against insulation yet safeguards distinctiveness. But the combination of cartel orientation and divisional orientation induces a considerable amount of social strain on the cartel.

Rather than representing the mortal demise of a cartel, as caricatured in much economic thought regarding cartels, conflict produces strain and
ultimately adaptations in the cartel's structure which help it attain effective pricing policy. Vacillating prices and bids stir up antagonistic cooperation which leads to the airing of disputes. The airing of disputes and complaints provokes the top level division managers, who are loath to see prices fall and bickering rise, to directly intervene. Top level company managers reach agreements together. They then order the beleaguered conspirators back into meetings. Company men and colleague conspirators work together to align pricing policies and priorities. Their complaints and resultant action pay off. The external market stresses are ameliorated. Falling or vacillating market prices and disrupted bid-rights are halted. Thus, in the great electrical conspiracy the effectiveness of the illegal cartel activity was positively related to the adaptation of social structure set into motion by the conflict, strain, antagonism, dissonance and frustration among actors. Conflict is the source of feedback bringing about structural adaptation necessary when managing the market.

Mobilization of working committee members alone is not enough to secure high prices. Without the accompaniment of division general managers, the colleague conspirators are likely to attend meetings and find a heightened difficulty coming to terms and an increase in their level of discord, distrust, and accusations. It is interesting that higher cartel mobilization through committee attendance, and the implied higher mutual surveillance of potential cheaters, results in more conflict, discord and antagonism. Even in this environment of high surveillance and hence difficulty in cheating on price agreements, conflict, discord and antagonism are heightened though attendance was high in the previous quarter. Also coupled with this is high volume of industry orders in the previous quarter predict higher conflict and dissonance in the next. Moreover, a negative relationship between current market prices and cartel mobilization was found; that is, committee attendance deteriorates as current market prices improve. Finally, a negative relationship was found between current market prices and the degree of consensus among the colleague conspirators. We suggest that an interesting dynamic is at play. One possible reason for the increases in accusations of opportunism, then, is an increasing interest in maximizing sales, rather than pricing policies, combined with an increasing level of attendee turnover, absenteeism, and even exit as current prices improve and market volume is on the up swing.

Cartels adapt their degree of centralization of authority according to changing levels of conflict and cooperation. Complex intra-organizational cartels are likely to have a beneficial ebb and flow relationship between centralization of cartel authority and a esprit de corps among the working committees. Because of the dual role set composed of divisional and market loyalties, cartels are characterized by a dynamic expansion and contraction of conflict and antagonism, or conversely, a dynamic expansion
and contraction of its own esprit de corps, which are in turn related to the centralization of cartel authority.

Committee level managers are faced with a dilemma about bringing in their division managers to settle disputes. On the one hand, managers ordered to attend price-fixing meetings have a strong incentive to deal with disputes within their own working group. By dealing with problems on their own, the working level managers hope to protect their autonomy in decision making (Eccles and White, 1988:46). Moreover, the history of cartel deal making within the working group may house information that may be viewed unfavorably by division general managers, and lower level managers will want to keep this type of information from upper level managers. For these reasons, the colleague conspirators wish to keep their superiors at bay. On the other hand, allegiance to one’s career makes each conspirator eager to be a “whistle blower” when cheated out of a deal; they wish to place blame on the cartel when bids that they were instructed to get by the division boss fell to another cartel member.

Inevitably, disputes become so irreconcilable that the conspirators must go through the hierarchy channels and appeal to division authority. Hierarchical, authority-based settings promote stability and efficiency of the inter-firm criminal enterprise under certain conditions. For example, if the middle management of the companies cannot work together with their counterparts from the other companies as a team in meetings, and complaints and accusations arise, top division managers will have to set in and adjudicate disputes and make decisions for them. At that point, the cartel becomes centralized, and rather than efficiency faltering, efficiency improves, prices rise, and promises are kept.

The entrance of the division brass into price-fixing meetings is not designed to be permanent. Working managers wish the reign of cartel centralization of authority to be short lived because they lose autonomy and may experience severe treatment as general managers settle disputes by imposing discipline. The disciplinary tactics can be Draconian. To cite an example from the electrical contractors conspiracy: “A GE vice president describing the type of coercion placed on an executive who resisted the norms of collusion stated, ‘We worked him over pretty hard, and I did too; I admit it.’” (Sonnenfeld and Lawrence, 1978:149). Moreover, embarrassing information discovered by a conspirator’s general manager at meetings about instances of questionable loyalty to the division due to an over-commitment to the cartel serve as another example why the colleague conspirators wish to return to the decentralized committee structure as soon as the divisional brass have served their purpose in bringing about compliance. Finally, upper level managers have an incentive to
delegate cartel formation because price-fixing is illegal\(^3\).

Once the division managers have brought about compliance to cartel policy, they exit meetings and the cartel is returned to decentralized committees. Once again an esprit de corps among committee members settles disputes and arranges bids and prices. This decentralized committee structure governed by an esprit de corps is the desired, if transitory, status of the cartel. As long as agreements can be arrived at and honored and disputes are held to a minimum, the decentralized committee structure provides managers with the autonomy that is needed in complex production markets. Indeed, organizational theory suggests that the efficiency of the conspiracy would be reduced when carried out strictly under company orders, or otherwise to the detailed directives of an administrative hierarchy. It is, in the end, a clandestine, inter-firm organization, operating in a turbulent and quickly changing environment of book prices, order prices, customized bid offers, allocation of fair shares across accounting quarters, and the like.

Eventually, though, market conditions deteriorate, disputes reach unacceptable levels, agreements are broken or cannot be arrived at, and division chiefs are again asked to enter. For the division managers to uniformly enforce compliance among the working committees, there must be disciplinary mechanisms available to them as well. We suggest that industry domination (White, 1992:22-64), plays an important role forming the efficacy of intra-organizational authority. A market leader strong enough to withstand a price war, while its competitors suffer damaging losses, may make viable threats against the other division chiefs if they do not enforce discipline within their hierarchies. As the market leader enforces discipline horizontally across the market, corporate executives enforce discipline vertically within their divisions. The cartel is back on track.

This view of cartel formation suggests that the dual role structure of the cartel as interface combined with the intra-organizational divisional role structure creates a self-regulating social system of colleague conspirators that brings prices above what market forces alone would have otherwise produced. While this view is drawn from just one case study, it is consistent with the conclusions of three economists at the Federal Trade Commission who concluded that the conspiracy had a significant effect on industry rates of return, with the turbine industry having one of the strongest effects (Lean et al., 1985).

Are cartels effective? Can price-fixing result in market failure? To flat out answer such a question from a single case study falls right into the

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3. For example, it has been found that centrality in price-fixing is a predictor of severity of legal sanctions (Baker and Faulkner, 1993).
sampling trap that has plagued the success-or-failure line of research. And yet, that is surely the most pragmatic and important question: are cartels effective? Without a scientific sampling of illegal cartels, and we doubt such a sample is possible, it is required that criminologists, sociologists, and economists identify the mechanisms that either inherently interfere with cartel formation or allow cartel formation to be robust enough to adapt to the challenges of the market. We contend that as a factual matter, the ineffective cartel model cannot withstand strong scrutiny as a description of the steam turbine conspiracy organization and action. The work of inter-firm colleague conspirators and within firm authority, and the interaction between the two, belie the suggestion that, aside from their reciprocal resource dependencies, there is nothing here of note. Moreover, ample evidence exists in this case study and other case studies in the anti-trust literature that large manufacturers and their executives have played key interlocking roles in orchestrating price-fixing and bid rigging cartels. As a factual matter, corporate monitoring and control appear to result in robust prices combined with stability of the industry pecking order (Connor, 1997; Eichenwald, 2000).

We have discovered what might be called the “hieratic cartel.” “The hieratic style is one of generalist oversight forced up out of the clash of specialized committees” (White, 1992:237). In the hieratic cartel, committee members initially attempt to solve problems and disputes internally. Inevitably, though, the disputes become irreconcilable and a hectic period of discord and dissonance results in committee members making appeals to the division hierarchy to enter meetings. Complaints get sent up to top level oversight personnel at the division level who are in effect forced into meetings out of a concern with the real and noisy clash of specialized committees. Division chiefs exert their power by reaching into the committee work, especially when the wind of deals falling through, promises not kept, feuds remaining unsettled, and prices in trouble spins out of control of the committees. Thus there is a lattice like network of committees attended by lower ranking, mid-level, and division chiefs (with their deputies). The relation between firms and between segments of a firm which gives them unity and distinction is one of opposition, what we have called cooperative antagonism. The chiefs meet, then agree to command their committee attendees; heads of the division now see action. They call the meetings, set the agenda, discipline cheaters, and thereby attempt to control both the attendees and the resultant deals on prices (White, 1992:237-245). An illegal cartel, in effect, may rely upon “using hierarchy as a constituting mechanism for meetings [which] creates an agile system for resolving disputes” (Stinchcombe, 1990:206). Not only
in legitimate business practices do "executives institute tyrannies by controlling meetings" (Stinchcombe, 1990:206), they also sustain effective illegal cartels by controlling meetings.

We have assessed the role of divisional administration in the affairs of the inter-organizational illegal specialist more adequately than has yet been done. Under certain external circumstances—such as market turbulence and pricing stress—administrative efforts at control of work are necessary, indeed they are conscientious efforts by company men to rein in the conflicts between colleague conspirators.

CONCLUSION

This study shows that the most useful element to take into the study of price-fixing and bid-rigging among corporations is a sensitivity to the joint external and internal pressures faced by organizations. We have shown that inter-organizational patterns of collusion—like most inter-organizational relations—are socially structured. This study shows that while real disputes and conflicts do break out among colleague competitors they are also deliberately managed and brought under control. We have noted that division level executives are subject to numerous external pressures affecting their situation such as backlogs, order flow, and prices. Thus there are now four conditions key to the development of cartel breakdown and repair. These are: (1) external market stress or other conditions that undermine the balance between a corporation's resources and capacities and its administrative burdens, eroding the effective administration and implementation of cartel pricing policies; (2) top level dissension and internal conflict among division elites, which prevents the chiefs from supporting and advancing the cartel's policies; (3) grievances and the spread of discontent among the middle level executives from each of the companies about the pricing decisions and cheating by their colleagues across firms, coupled with their unhappiness about the division head's inaction or inability to adroitly manage the internal chiseling by their colleague competitors; and (4) divisional actions, taken in response to expressions of grievances, that are seen as effective, just, appropriate and within the zone of indifference. Fiat and hierarchically based administrative constraint can, and did, generate compliance and discipline among the conspirators in the steam turbine conspiracy once the press of external conditions stirred up unrest and discontent among the lower level pricing specialists and middle level sales managers. It is this four part theory that, we believe, can help explain the dynamics of stability among conspirators and company men in the promoting of illegal pricing policies.

This study highlights some relatively neglected complexities and dilemmas surrounding trust. Recent scholarship on economic organization
shows that trust plays a vital role in cooperation and coordinating efforts. Our findings are consistent with this argument, but go deeper into inter-organizational events to demonstrate the problem of trust is also a problem of opportunism and predation. Explaining the emergence of coordination seems as much about understanding how opportunism and chiseling are avoided as it is about explaining how trust emerges. Data of meetings drawn from the archival records show conspirators wrestling with and even negotiating the issue of defection, opportunism, and chiseling. Thanks to the complexity of the turbine manufacturing process and the complexity of the bidding procedures, the opportunities for backing out of agreements and cheating are plentiful. The struggle over progress payments and financing the project during its production are "codes" for numerous obstacles to building any kind of illegal association.

A sample of some of the opportunistic maneuvering that appeared in the conspiracy are listed below.

1. **Simple discounting off book.** Offer discounts to buyers substantially below the listed book prices. Acceptable range is three to five percent off book, below that one is starting to give away prices.

2. **Components and add on features.** Bury accessories and components in the overall order, offering them to the buyer at drastically reduced prices or at no charge, in hopes of receiving the bid approval on the overall costs.

3. **Engineering costs increased megawatts.** Design features so that the machines produce more energy and capacity, but charge less than customary for these "upgrades" in megawatts. This is in effect giving away engineering work on large orders.

4. **Factory tests and fees.** Deduct factory tests and installation fees from total costs/bid. Or, again, offer special rates because of specifications in the complex requirements of the utility order.

5. **Financing charges.** Waive progress payments and financial arrangements requiring the buyers or utility to pay for the production for the turbine being produced, hence progress payments.

A careful reading of the ethnography of the conspiracy clearly shows that the erosion of trust, and the increase in occasions of cheating and "misunderstandings" over past agreements usher in periods of intense bickering, conflict, and discord leading the middle level managers to request their division leaders to become directly involved at meetings. Moreover, a simple Poisson regression analysis of the counts of division level managers presiding at meetings shows that conflict is a strong and significant predictor of the division bosses being involved. A key question
therefore is how and to what extent the positions of leadership and participation in the cartel—as a criminal enterprise—are backed by the power and authority of the participating corporations—as an array of roles and resources of power, authority, and control.

Cartel players may have authority and positional power in their home firm but exhibit little interest in and involvement with the clandestine affairs of the cartel, in which case they are referred to as an “officials” or “bureaucrats.” On the other hand, they may have broad influence in the meeting to meeting policies and practices of the cartel committees but only some positional power or authority in their company. An example here would be the manufacturing firm whose division vice president directly orders a middle or a lower level manager into the meetings. In this case they are referred to as “cartel deputies” or informal leaders of the conspiracy, or in the argot of the electrical conspiracy “members of the choir,” “the clan,” or “pricing specialists.” Then again cartel attendees can combine both positional power and authority in their home firm with broad influence over the affairs of the committee meetings, in which case they are labeled “formal cartel leaders,” or in the argot of the conspiracy “key conspirators” or most simply “chiefs.” If they command neither formal nor informal power, they are simply followers, or in the phraseology from the trial of the conspirators “irregulars” or more contemptuously “minions.” Figure 4 shows how cross classification of cartel power and corporate power produce these roles.

Figure 4 Corporate Roles and Corporate Crime

<table>
<thead>
<tr>
<th>Cartel Power</th>
<th>Corporate Power</th>
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<tbody>
<tr>
<td>High</td>
<td>“Core Conspirators” (The Specialists)</td>
</tr>
<tr>
<td>Low</td>
<td>“Officials” (The Bureaucrats)</td>
</tr>
<tr>
<td>“The Clan”</td>
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White-collar illegalities become integrated into ordinary divisional routines and practices (Katz, 1979) and involved managers develop justifications or accounts for their collusive behavior with competitors (Benson, 1985). Organizational roles in the host company are enacted into positions
in the conspiracy. The process of enactment is perverse when it comes to assigning personnel to a potentially criminal enterprise. There is nothing illegal about talking with competitors in the normal course of sales and marketing of products to the electrical utility managers. Nor are their any civil or criminal violations when managers meet their market rivals in the halls, conference rooms, and dinners at the annual conventions of the national association of electrical manufacturers or heavy electrical engineers. On the contrary, the open meeting process is constitutionally protected in capitalist society. Would-be victims may detect a conspiracy behind any meeting of rivals, but laws grant freedom of association without specifying any particular amount, form, or levels of association. So the power is allocated to the interpreters of The Sherman and Clayton Acts to decide whether, how, and whom to accuse of secret collaboration in restrained of trade. This situation sets the stage for the career of a cartel committee among manufacturers: first, there is the sociation, the conversation, the chatting at the convention among executives from three companies. Next, there is the loosely organized get together, accompanied by the friendly griping about the market and about one another, followed by dinner, golf, and more conversation. This is perhaps followed by a casual get together that turns into part griping session and part mutual admiration society, one in which the managers discover they share a lot in common, and one where they start to mutually suggest that they really are all in one boat. This might be followed by a more dangerous invitation, to secretly meet for purposes of discussing the vaguely defined but empirically experienced industry problems, followed by a collection of serious meetings arranged along more formal, and hierarchical, lines designed to start up negotiations over prices, to open up bargaining over market shares, and to get down to the business of allocating contracts—the life blood of the industry, the bids coming in from the buyer side of the market, from the electrical equipment customers.

We suggest that it is worth further investigation to examine whether the stability and efficacy of a conspiracy is sustained by authoritative decisions, inter-organizational leadership, and adroit management of intra-firm staff in other kinds of hierarchical, authority-based settings engaged in crime. Our findings regarding the social structure of crime by committee may be used to further understand misappropriation and graft in colonial expansion (Adams, 1996), bribery and official corruption in aircraft contracting (Boulton, 1978), collective embezzlement and cover-up in the savings and loan industry (Adams, 1990; Calavita and Pontell, 1990; Pizzo et al., 1989), misuse of proprietary information in investment banks and law firms (Stewart, 1992), pricing and volume controls in agri-business (Eichenwald, 2000; Lieber, 2000), health insurance fraud by small business (Tillman and Ingergaard, 1999), corporate partnerships run as Enron-like.
autonomous organizations (Fox, 2003; Bryce, 2002), hierarchically directed
drug cartels (Jacobs and Gouldin, 1999), the re-insurance transactions
between large insurance corporations (Blundell, 1976), bribery of public
officials by corporate giants (Jacoby et al., 1977), the misappropriation of
investor capital in oil and gas partnerships by brokerage firms
(Eichenwald, 1995; Sharp, 1995; McClintick, 1977), crime by leasing orga-
nizations (Gandozzy, 1985; Weisman, 1999), and in the direction of collec-
tive cover-up by high level participants (Katz, 1977).

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Ekeh, Peter P.

Elliot, Larry A. and Richard J. Schroth

Fligstein, Neil

Fox, Loren

Freeland, Robert F.

Freidson, Elliot
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Gandossy, Robert P.

Geis, Gilbert

Gouldner, A. W.

Hay, George A. and Daniel Kelley

Herling, John

Hochstetler, Andy and Heith Copes

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