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Institutionalization, Coercive Isomorphism, and the Homogeneity of Strategy

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Traditional research on strategy has emphasized heterogeneity in strategy through such concepts as competitive advantage and distinctive competence. Yet firms often demonstrate homogeneity in strategy. This paper suggests that institutional forces inherent in interorganizational networks generate isomorphic process that can cause firms to pursue similar strategies. A study of firms that supply component parts and systems to auto manufacturers was performed to determine if dependence and coercive isomorphism can lead to homogeneity of strategy. Results indicated that greater firm dependence did seem to cause firms to exhibit greater homogeneity in strategy. Implications for research and practice are discussed.

For the past few decades, strategy research (like most organization research) has focused on understanding the differences that make a difference - that is, to identify those variables that differ between firms, and how the differences in those variables might lead to differences in firms' performance. Certainly this is a worthwhile pursuit for research activity, and these efforts have led to the development of theories and concepts that have contributed to the success of numerous companies. Strategy researchers have produced volumes of empirical studies that have led to the creation of a wealth of constructs that have benefitted managerial decision making in the processes of formulating, implementing, and executing strategies.

The underlying assumption in virtually all of the extant strategy research has been the heterogeneity of strategy; that is, that the strategies of firms are dissimilar in various (meaningful) ways. As a result, the research that has developed over the years has been intended to either explain why such heterogeneity occurs, how such heterogeneity influences on strategic management and organization processes, and/or the effects of the heterogeneity on firm performance. The heterogeneity assumption can be found in the classic early writings on strategy, which emphasized the variance in organizations' strategic activities due to the idiosyncratic set of environmental forces with which firms must contend (e.g., Beard and Dess, 1981; Hofer and Schendel, 1978; Rumelt, 1974).

The heterogeneity assumption underlies many of the standard concepts used in the field. For example, consider the concept of distinctive competence. Firms possessing a distinctive competence are presumed to have skills, expertise, knowledge, or technology which is superior to (and therefore different from) competitors (Selznick, 1957). These differences among organizations are seen as crucial to firms' success (Hitt and Ireland, 1985; Snow and Hrebiniak, 1980). As distinctive competencies are developed over time, these can become part of the collective learning and knowledge base of the enterprise, which is viewed as the core competence of the corporation (Prahalad, 1990).

Likewise, the concept of competitive advantage - a significant concept in much strategy research and writing - by its very nature presumes heterogeneity. Competitive advantage has been defined as the characteristic, unique opportunities of a firm that results from the firm's product-market position and the direction relative to that position (Ansoff, 1965). A competitive advantage means that a firm is in a superior strategic position relative to competitors and therefore can achieve superior performance through the proper strategic actions (Porter, 1980, 1985). A competitive advantage may arise from a distinctive competence (Hayden, 1986), but the essential point is that competitive advantage asserts that firm strategies are different from those of other organizations. If differences in performance can be linked to differences among firms in strategic position, resources, processes, or activities, it is possible to offer prescriptions and suggestions to managers that will lead to improved organization results.

But if heterogeneity is at the core of the overwhelming volume of strategy research, if the essence of strategy is choosing to do things differently than rivals (Porter, 1985), why then can it be observed that many firms pursue the same strategies? Why is there frequently great similarity among firms' strategies - even within the same competitive market? If managers are encouraged to develop distinctive

competencies or competitive advantages, how come so many firms do the same things as others - including rivals?

The purpose of this paper is to examine this issue of strategic homogeneity - the similarity among firms in strategy. The essential suggestion is that the institutional environment within which firms operate can - and often does - lead firms to pursue common strategies. Specifically, one such aspect of such institutional environments, the issue of dependence and coercive pressure, will be examined to determine if firms subject to such institutional pressures are more likely to pursue similar strategies. An analysis of firms in the auto supplier industry will be performed to determine if strategic homogeneity can be identified and linked to the presence of institutional forces.

STRATEGIC HETEROGENEITY, HOMOGENEITY, AND ISOMORPHISM

Strategic Heterogeneity

As has been noted, the dominant perspective in strategy research emphasizes the heterogeneity or differences in firms' strategy. Four dominant themes or frameworks can be identified that examine the heterogeneity in strategy. The first is the Resource Based View of the firm, which emphasizes differences due to firms' differential access to scarce strategic resources. The Resource Based View (RBV) suggests that firms obtain and sustain competitive advantage through the deployment of scarce resources and capabilities that are unique, scarce, and inelastic in supply (Barney, 1991; Peteraf, 1991; Wernerfelt, 1984). According to the RBV, the heterogeneity of strategy arises from the differences among firms in the access to and deployment of scarce, finite strategic resources. Since these resources are unique, firms that have access to or control over these resources are able to charge higher levels of economic "rent," and thereby produce superior outcomes and performance. The presumption is that these resources are in fact unique, scarce, and finite, and that firms who control these assets do so explicitly to prevent rivals from using similar assets in a specific product-market. Research performed within the RBV has tended to support the theory (Barney and Arikan, 2001; Ray et al., 2004). But firms require more than scarce, limited resources. Firms also operate in environments in which the "resources" are not necessarily finite, but may include such things as legitimacy, knowledge, and organizational networks. To the extent that these issues can affect firm performance, strategies that are based on the utilization of these elements are available to all firms equally and might cause firms to pursue similar strategies.

The second, the Industry Structure framework, examines differences in strategy due to firms' differential positions within industry structures. Firms seek to develop a sustainable competitive advantage by identifying and occupying a unique position within a specific industry (Porter, 1980, 1985). By analyzing the structure of the industry, firms can determine the appropriate strategic position and then engage in a process of strategic analysis to secure that position by developing or employing unique competitive advantages. Research has found general support for the model (Dess and Davis, 1984; O'Farrell et al., 1992; Parnell, 1997). However, firms are embedded in more than mere industry structures. The environments of organizations include political and legal forces, social forces, macroeconomic forces, and technological forces as well as the 5 forces that Porter emphasizes in his work on strategy. To the extent that these "non-industry" level forces affect firm performance and affect firms in a similar fashion, the influence of these forces on strategy might cause firms to pursue similar strategies.

The third framework, the Competitive Markets view, examines differences in strategy due to the competitive behaviors of firms within a specific product-market. Three dominant research streams can be identified. The first, the Product Life Cycle framework, suggests that strategies are contingent upon (and therefore differ) based upon the stage of the life cycle (Hofer, 1975; Levitt, 1965; Wasson, 1974). The second framework might be termed the Market Share/Market Growth model, in which strategy is contingent upon a firm's unique position in a market in terms of market share and the growth rate of the market, perhaps most represented by the Boston Consulting Group Matrix model (Henderson, 1970) (along with its relative the GE portfolio model, c.f. Hax and Majluf, 1983) and the Profit Impact of Market Strategy (PIMS) database. (Buzzell and Gale, 1987). The central premise of these models is that heterogeneity in strategy occurs because the position of any firm within a given market - that is, the firm's

market share - and the growth characteristics of a given market are unique to each organization. But markets are embedded within larger societal, economic, and political structures; and to the extent that these "extra-market" forces are similar among all firms within a given market, such structures might result in similar strategies.

The fourth theme can be termed the Managerial Characteristics perspective and examines heterogeneity in strategy arising from differences in individual managers, managerial decision making, or the composition of top management teams (Child, 1972). Strategies assume a human agent and are influenced by executives exercising a measure of "free will" in making strategic decisions (Bourgeois, 1984). Various empirical studies have examined the nature of the strategy decision process (e.g., Barnes, 1984; Schwenk, 1984) as well as individual characteristics of senior managers or top management teams (e.g., Hambrick, 1981; Hambrick et al., 1996; Thomas and McDaniel, 1990). While the preceding perspectives emphasize the impact of external forces, the Management Characteristics framework examines the impact of internal organization factors on decision making and the resulting strategies. To the extent that managers are indeed independent actors exerting free choice in the decision making process, the resulting differences in firm strategies would be expected. But managers operate within organization environments in which decisions may be constrained by both external forces as well as internal organization elements. If these forces are common among organizations within a given market or industry, managerial choice may be restricted or influenced in such a way as to lead to similarities in the strategies of organizations.

Limitations of Strategic Heterogeneity Models. Any review of the theoretical and empirical literature on organization strategy will indicate that a majority of the research views strategy as a heterogeneous variable. Organizations will pursue different strategies due to differences in the organizations, top managers or management teams, availability and control of resources, market dynamics, and industry structures. The unique configurations of the various elements within the environment of organizations combine to create a distinctive set of elements and forces that confront a firm. Variation in these factors will result in heterogeneity in the strategies that firms pursue. Underlying these research perspectives is the view, drawn from work in the field of organization theory, that firms respond or adapt to the environments of organizations (Aldrich, 1979; Chakravarthy, 1984; Pfeffer and Salancki, 1978).

However, by assuming that the purpose of strategy is to enable a more efficacious response to factors in the external or internal environments of organizations, researchers are limited to strategy as a reactive process. This constrains the models by making it difficult to examine those truly breakthrough strategies that in fact change the nature of the available resources or the control of resources, alter the industry structure or market dynamics, and that are outside of individual managers' cognitive frames.

Similarly, by emphasizing strategic heterogeneity at the resource, industry, market, organizational, or managerial levels of analysis, such research overlooks the impact of forces in the broader societal and institutional context of organizations. Since these forces are assumed to be felt equally by all organizations, the effects are largely written off as immaterial to the research question at hand, which is biased toward identification of differences in strategy and the resulting differences in outcomes and firm performance. Yet it is clear that firms are embedded in environments that include more than resources, industries, and markets.

Strategic Homogeneity

Despite the bias toward understanding the heterogeneity of strategy, there is research within the discipline that suggests that strategies among firms are often homogeneous. Such research can be viewed as falling within two distinct areas: the content of firms' strategies, and the strategic processes of organizations. Research on homogeneity in strategy content is largely found in the work examining strategic groups. Strategic processes concern the homogeneity in the implementation and execution of strategy.

Homogeneity in strategy content: Strategic Groups. Strategic groups have been defined as "groups of firms within an industry which follow similar (but not identical) strategies" (Hatten et al., 1978: 592) and

was further refined as "a grouping of organizations which pursue similar strategies with similar resources" (Hatten and Hatten, 1987: 329). Later researchers identified strategic groups as "similarities in strategic actions intended to alter competitive advantage" (Cool and Schendel, 1988). Note that, by definition, the presence of strategic groups is predicated upon the similarity in firm strategy. This is in contrast to the prevailing view of strategic heterogeneity that is fundamental so the majority of the empirical research in the strategy discipline.

There have been numerous studies that have supported the presence of strategic groups within markets as diverse as manufacturing, retail, transportation, distribution, and health care (McGee and Thomas, 1986). While strategic groups are primarily viewed as an analytic tool or convenience for researchers (McGee and Thomas, 1986), some researchers have even suggested that one strategic choice a firm might make is the choice of which strategic group to participate in within a given industry (Dess and Davis, 1984). Although the causes and effects of strategic groups remain under investigation (e.g., Barney and Hoskisson, 1990; Peteraf and Shanley, 1998; Reger and Huff, 1993), the presence of strategic groups is well accepted within the strategy literature (Dranove et al., 1998). The prevalence of such strategic groups across diverse industries suggests that there is in fact often homogeneity of strategies among firms.

Homogeneity in strategy processes: Organization structure and strategic behavior. Ever since Alfred Chandler's book, "Strategy and Structure: Chapters in the History of Industrial Enterprise" was published (Chandler, 1963), researchers have demonstrated the linkage between organization structure and firm strategy (e.g., Burgelman, 1983; Hill and Hoskisson, 1987; Rumelt, 1974; Teece, 1981). But in addition to noting the relationships between strategy and structure, several authors have also noted the increasing similarity in organization structures within industries (Armour and Teece, 1978; Hoskisson, 1987; Palmer et al., 1987). To the extent that structure represents a strategic choice about the alignment of organization resources, the increased similarity in the structural form of corporations suggests that there may in fact be homogeneity in the strategic decision making processes within organizations.

There is also evidence that suggests firms consciously choose to adopt strategies that are similar to those of other organizations. In a follow-up to the discussion of strategic groups in the U.S. pharmaceutical industry, Cool and Schendel noted that firms in the U.S. pharmaceutical industry tended to imitate the strategic commitments of rivals (Cool and Schendel, 1988). A study of the Japanese securities industry found that so-called "second tier" securities firms tended to emulate the "Big Four" of Nomura, Daiwa, Nikko, and Yamaichi as a response to the challenge of internationalization of financial markets (Horvat, 1987). In a study of the shake-out of the U.S. color television industry, it was determined that, while there were differences in strategies between firms which survived and those that failed, there were similarities in strategic behavior among surviving firms. Likewise, there were similarities in strategy among those firms that failed; but these differed from those of the surviving firms, suggesting that choosing to emulate rivals can affect firm performance (Willard, 1985). The results of these studies suggest that firms may consciously choose to imitate the strategies of others within an industry.

Isomorphism: Competitive and Institutional

The concept that might best account for the observed homogeneity of strategy is the process of isomorphism. Isomorphism has been described as a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions (Hawley, 1968). That is, units subject to or operating within similar environmental arrangements will develop similar forms of structure and action. In the organizational sciences, isomorphism occurs as firms modify their characteristics in a direction of increasing compatibility with the environment (Aldrich, 1979). Consistent with prior work (DiMaggio and Powell, 1983; Fennell, 1980), this paper suggests that there are two types of isomorphism: competitive and institutional.

Competitive Isomorphism. Dominant perspectives on strategy assert that isomorphism among organizations is due to the effects of forces within the organization's competitive environment. Competitive markets, industry structures, and organizational characteristics all presume variation occurs

among firms due to differences in structure and strategic behavior (Carroll, 1984). The environment changes independently of the organization, and forces in the competitive environment determine the structural forms that will survive. In capitalistic economies, the market is the primary selection mechanism (DiMaggio and Powell, 1983). As organizations seek to gain control over scarce resources leads to competition among firms (Barney, 1991), and in turn competitive forces lead to isomorphism as the market selects those firms which possess the requisite characteristics for survival, and likewise selects out those firms that lack the necessary qualities (McKelvey and Aldrich, 1983). Over time, there is a tendency for similar types of firms to survive, resulting in strategies and structural forms that appear homogeneous.

Competitive isomorphism assumes a rational system that emphasizes market competition and fitness measures (DiMaggio and Powell, 1983); as a result, this approach is adequate for those environments in which there is free and open competition among firms. However, it is not wholly appropriate for those environments in which competition is limited (such as oligopolistic markets) or heavily regulated by law (e.g., public utilities). In addition, as Williamson argued, modern markets are subject to various forms of imperfections in competitive relations (Williamson, 1975). These market imperfections can limit the effectiveness of competition as an environmental selection mechanism, as non-competitive forces can shape strategic behaviors.

The assumptions that underlie the competitive isomorphic model are frequently violated by the environments of organizations. Forces beyond those in the competitive environment are present and influence the strategic choices of firms. In addition to scarce resources, firms also require political power and institutional legitimacy (Carroll and Delacroix, 1982), and for social as well as economic fitness (Aldrich, 1979). Suppliers, governments and other regulatory groups, and other societal groups such as consumer interest organizations, environmental groups, ethnic and religious groups, etc., are legitimate concerns for organizational strategists in developing strategies. The presence of such entities within the environments of organizations can give rise to institutional structures and forces, including isomorphic forcers for homogeneity in strategy (DiMaggio and Powell, 1983).

Institutional Isomorphism. There are two elements that define institutional perspectives on organizations (Zucker, 1987). The first are rule-like social fact qualities of organized patterns of interaction, and the second is embedding of these interactions in formal structures that are not tied to particular actors or situations. Institutional theories of organizations suggest that organizations are influenced by normative pressures which may arise from the government or state; from other organizations; or from within the organization. These pressures can cause organizations to be directed by elements which are seen as in some way legitimate, such as standardized operating procedures, professional certifications, legislative requirements, etc. The adoption of these legitimated elements leads to isomorphism with the institutional environment and may increase an organization's chances of survival (Zucker, 1987).

Institutional forces arise through a process of structuration (Giddens, 1979). As organizations interact over time, the structuration process can lead to formalized patters of interaction that are independent of individual firms and structures of interrelationships that become embedded within and among the firms. In this way firms become participants in institutional arrangements (Zucker, 1987). Organizations may try constantly to change or alter firm strategies, but at some point in the structuration process, the aggregate of these individual changes may be to lessen the strategic diversity of these organizations (DiMaggio and Powell, 1983). In effect, organizations in highly structured relationships are responding to an environment which consists of other organizations responding to their environment, leading to a situation in which organizations are responding to an environment of organizations' responses. In these circumstances, strategists construct for themselves an environment in which choice behavior is constrained by the relationships among organizations, and such constraints increase the likelihood that firms will pursue similar strategies by limiting the strategic alternatives available to strategic decision makers.

In highly structured networks of interorganizational relationships, as may be found in many industries and markets, strategic activities may be driven less by competition for scarce resources or the need for efficiency than by the structure of the interorganizational network. Relationships among organizations are

understood, innovations are quickly diffused throughout the network, production methods are standardized or generally known by all firms, and strategies are discernable. As strategies are developed within these highly structured institutional arrangements, homogenization of strategy may result. Such homogenization is due to three isomorphic processes present in these institutional arrangements: coercive isomorphism, mimetic isomorphism, and normative isomorphism.

Coercive Isomorphism. Coercive isomorphism results from both direct and indirect pressures exerted on firms by other organizations upon which firms are dependent, and by the expectations of the societies in which firms operate (DiMaggio and Powell, 1983). These pressures are viewed by firms as forces for action or persuasion. One such coercive force would include the government. Through such mechanisms as regulation and legislation; purchasing of goods and services; control of resources; and fiscal policy. For example, the recent U.S. government bailouts of the financial services industry in late 2008 and the similar bailout of General Motors in 2009 demonstrate the ability of the government to influence the environments of organizations. Likewise, the presence of powerful customers or suppliers can constrain the strategic choices of managers, leading to similarity in firm strategies. Consider the effect of a large retailer such as Wal-Mart on its suppliers; Wal-Mart is able to demand certain behaviors from suppliers that restrict these firms' latitude in decision making. When managers are faced with the requirement to respond to very powerful constituents, they may have little choice in developing strategy but to acquiesce to these demands and adopt strategies that are consistent with the expectations of these powerful actors. The nature of asymmetrical dependencies among organizations in highly institutionalized interorganizational networks can subject firms to pressures to conform strategic behaviors to the demands of powerful constituents, with the result that the strategies of the firms become homogeneous.

Mimetic Isomorphism. A second force for homogeneity in strategy arises from uncertainty. When an organization's goals are ambiguous or poorly understood, or when the environmental turbulence or dynamism create uncertainty, organizations may seek to model their strategies after those of other organizations. This process is referred to as mimetic isomorphism, as firms seek to "mimic" the strategies of other organizations (DiMaggio and Powell, 1983). Such modeling provides a rationale for action and can establish premises for decision making and strategy formulation. In effect, managers who may feel overwhelmed by the turbulence, dynamism, and complexity of their situation may opt to copy what other firms are doing out of a sense of "well, hopefully they have figured out what to do, so we'll just copy them." Such strategic models may be diffused indirectly and unintentionally through such mechanisms employee transfers among organizations, or explicitly through consultants, trade associations, (DiMaggio and Powell, 1983) and such tools as "benchmarking" or "best practices." Several studies have noted the effects of such mimicry in firm strategy (Han, 1994; Haveman, 1993; Tingling and Parent, 2002), suggesting that imitation may not only be the sincerest form of flattery, but may prove to be a sincere form of strategy as well.

Normative Isomorphism. Normative isomorphism is the third and final of the institutional isomorphic processes. Normative isomorphism is largely thought to be due to professionalization, defined as "the collective struggle of members of an occupation to define the conditions and methods of their work, to control the 'production of producers,' and to establish a cognitive base and legitimation for their occupational autonomy (DiMaggio and Powell, 1983: 152). Two aspects of professionalization are important sources of isomorphism. The first is the use of formal education requirements. In this manner, business schools and business education serves as a source of isomorphism. As more organizations hire managers from business schools, or as more individuals in organizations pursue business degrees like the MBA, there is a tendency for common norms of behavior, analytic models, and frameworks for strategic decision making to be diffused throughout organizations. The second source of professionalization is the growth of professional networks which span organizations and which allow information and models to be diffused quickly. These would include interorganizational transfers of personnel, trade associations, the use of common consultants, and the interlocks among boards of directors, to name a few. Through these and other similar mechanisms, norms for firm strategies and strategic behaviors are spread among organizations (Lawrence, 1999; Mizruchi and Fein, 1999; St. John et al., 2001). The result is that managers are operating from similar frames of understanding, use similar analytic tools, and employ

similar processes in the development of firm strategies; and thus the strategies that results often bear a remarkable similarity to those of other organizations within the network.

Each of these three institutional isomorphic processes can and will occur, even in the absence of any evidence that these increase internal organizational efficiency (DiMaggio and Powell, 1983). Such strategic similarities can make it easier for firms to transact with one another, and to be acknowledged as legitimate and respectable. It is possible that access to such "institutional capital" could enable firms to improve performance (Bresser and Millonig, 2003). There also may be risk in pursuing strategies that are seen as deviant from prevailing expectations, as such organizations could be seen by investors, customers, suppliers, and employees as "too risky" due to the concern for legitimacy.

While each of the three institutional forces for isomorphism derive from separate sources - coercive from dependence, mimetic from uncertainty, and normative from professionalization - in practice these are often intertwined and difficult to separate. Each is conceptually distinct, yet in complex interorganizational networks these may interact in numerous ways. The effects of any single mechanism on the isomorphic process and strategic homogeneity may not be readily apparent from observation (DiMaggio and Powell, 1983). Yet, it would be useful to determine if the effects of these institutional forces for isomorphism can in fact be found to be related to strategic homogeneity. The following section reports on an empirical test of institutional isomorphism and the homogeneity of strategy.

COERCIVE ISOMORPHISM AND STRATEGIC HOMOGENEITY: AN EMPIRICAL TEST

Research Hypothesis

Based upon the theoretical review and development of institutional isomorphic forces, I decided to focus on one particular process, coercive isomorphism. Recall that coercive isomorphism results from the dependence of firms on other organizations for valued resources. As noted by Pfeffer and Salancik, organizations will adopt structure and practices as a response to such dependence (Pfeffer and Salancik, 1978). Powerful organizations can exert pressure on the dependent firms to conform plans and practices to the demands of the more powerful organizations, with the result that the strategic choices - and hence the strategies of the dependent firms - will appear more homogeneous. Since strategy is focused on the market and customers, I focused this research on the institutional relationships that result from the interactions between relatively more powerful customer organizations and suppliers who may be more or less dependent on the customers for the critical resource of sales revenues. Based upon the discussion of institutional theory and coercive isomorphism (DiMaggio and Powell, 1983), the following research hypothesis was derived:

> Hypothesis: Supplier organizations that have relatively greater dependence on common customers will exhibit greater homogeneity of business strategy than organizations that are relatively less dependent on the same customers.

Customers are an important source of sales revenue for firms, and firms must make efforts to meet customer demands and serve the customers' needs to compete successfully in a market. Firms will therefore adjust strategies and strategic behaviors to meet customer requirements. This is particularly true for those markets in which there are relatively many firms trying to sell to very few customers; in such cases, customers have a high amount of power or leverage (Porter, 1980). The presence of a limited array of customers upon whom firms are dependent means firms may have few options from which to choose when making strategic decisions. By limiting the range of strategic options through the stipulation of required behaviors - via contracts, product design specifications, and similar mechanisms - it is more likely that firms will choose similar strategies.

Research Methodology

Sample. For this study, I examined firms that were suppliers to U.S. automobile manufacturers. Auto suppliers were selected for several reasons. The industry is very large, both in terms of economic impact

and scale. Transportation expenditures generally account for a significant percentage of the annual outlays of U.S. households, and the annual revenues of the industry are substantial. Within the industry, there are numerous supplier organizations (over 20,000 globally), yet relatively few manufacturers of original equipment, or OEMs, to whom these suppliers can sell parts and services. As a result, there is a high degree of asymmetry in the relationships between OEMs and suppliers, with the OEMs generally having substantial leverage due to the volume of OEM purchases and the relatively greater number of suppliers and potential suppliers available from which to purchase. The supplier base is very diverse, allowing for information to be gathered from firms that produce a wide array of parts and components, form springs and seats to electronics, tires, screws and bolts, automotive systems, paints and finishes, and many other components and services, which assists in generalizing results of the research, since findings are not limited to a particular product group or production process.

In contrast to the large number of suppliers, customers for these products are relatively few. The OEM automobile companies consist of General Motors, Ford, and Chrysler among U.S.-based companies, and foreign firms such as Daimler-Benz, BMW, Nissan, Mazda, Honda, Toyota, Hyundai, and Kia. While there are thousands of suppliers, there are only a few buyers of automotive component parts and assemblies. This does tend to give the OEM buyers significant leverage and power within the industry, as the number of buyers is very few relative to the potential sellers (Porter, 1980).

A sample of suppliers was taken from the ELM guide to automotive sourcing (ELM International, 2010). As part of a larger study on the dynamics of the automotive supplier industry, the CEOs of the supplier firms listed were contacted and asked if they were willing to participate in a survey regarding the auto supplier industry. Three hundred and twenty eight CEOs indicated a willingness to participate in the research; of these 111 firms (33.84%) provided complete responses, and 168 (51.22%) provided partial data reports for a total of 279 responses; 49 firms (14.94%) declined to participate in the research. Suppliers were selected at random from the ELM guide listings in order to provide a reasonable sample of the diversity of firms in the automotive supplier industry.

Data Collection. A fairly lengthy and detailed survey was developed, inquiring about several aspects of the auto supplier firm's activities, performance, and operations. Included were questions on basic firm data such as number of years in business and number of employees; sales data by customer and industry; operating data, including information on financial and capital expenditures; competitive assessment; projected future business and operating activity; information on the strategic planning process used by the firm; interorganizational relationships; and perceptions of the firm's environment. The survey was over 7 pages in length with numerous items within each category. (A copy of the full survey is available from the author upon request.) The survey was mailed to each respondent who had agreed to participate in the survey along with a stamped return envelope. As replies were received, the data were entered into the SPSS-PC program for statistical analysis.

Independent Variable: Firm Dependence. Research on supply chain management has frequently defined dependence as a function of firm sales (El-Ansary and Stern, 1972; Frazier, 1983; Mentzer et al., 2001; Scott and Westbrook, 1993). For any individual firm, dependence is the degree to which a firm must maintain a relationship with another firm in order to achieve desired goals (Frazier et al., 1989). Based on these definitions, one way of measuring dependence is the percentage of a firm's total sales generated from sales to a particular customer or group of customers. For the auto suppliers in this study, the extent of current dependence was measured as the percentage of total firm sales that come from direct sales to an automotive OEM, represented as a ratio:

$$Current\ Supplier\ Dependence = \frac{Firm\ Sales\ to\ Automotive\ OEM}{Total\ Firm\ Sales} \quad (1)$$

Researchers have also suggested that dependence is not only a function of current sales but also of projected future sales levels as well (Frazier, 1983; Frazier et al., 1989). That is, if a firm anticipates increasing sales to a particular customer or group of customers in the future, the firm is relatively more dependent that is sales were expected to decline. This would be particularly true when considering issues of firms' strategy, which is often based on projections and forecasts regarding future conditions.

Consistent with prior research on dependence, the second measure of dependence in this study was the firm's projected sales to automotive OEMs in the next five years. This was measured on a nine point scale from -4 (Sales will DECREASE significantly) to + 4 (Sales will INCREASE significantly).

Dependent Variable: Firm Strategy. Over the years there have been numerous approaches and methods to the measurement of strategy. For this study, I chose to focus on 2 aspects of firm strategy: resource deployments and market positioning. Patterns of resource deployments have long been viewed as a crucial element of a firm's strategy (Hofer and Schendel, 1978). The resource deployments represent a strategic choice by managers which helps firm achieve goals and can provide a competitive advantage over rivals. Market positioning is the positioning of a firm's products and/or services with respect to customers. Major issues are the price and quality of the products and/or services offered as compared with rivals (Hofer and Schendel, 1978; Porter, 1980).

Measuring strategy requires multivariate measurement; firms do not have a single strategy, but rather invest resources across multiple areas of business activity in a strategic manner (Hambrick, 1980), and measures of strategy should reflect the multidimensionality of the construct (Snow and Hambrick, 1980). One such multivariate method of measuring strategy is used in the Profit Impact of Market Strategies (PIMS) database (Buzzell and Gale, 1987). The use of measures from the PIMS database has been well documented in the strategy discipline and appears to have general acceptance in the literature (Driver et al., 1996; Ramanujam and Venkatraman, 1984; Roberts, 2003) and has been used in studies of buyer/supplier relationships (Cowley, 1988; Kekre, Murthi, & Srinivasan, 1995).

For this research, information was obtained for ten strategy variables. These variables were divided into 4 categories: Product Competition variables (measuring positioning), Production/Investment variables, Efficiency variables, and Marketing variables (measuring strategic resource deployments). These categories and the associated measures are shown in Table 1. These categories and variables have been used often in strategy research and appear to represent an acceptable framework for analyzing strategic behavior (e.g., Anderson and Zeithaml, 1984; Buzzell and Wiersma, 1981; Hambrick, 1983).

Subgroup Partitioning. To properly test of the hypothesis presented in this study, it was necessary to partition the auto supplier firms into groups based upon the level of dependence. Recall that the hypothesis asserts that firms with greater levels of dependence will exhibit greater homogeneity in strategy; hence it is necessary to partition firms into those that are relatively "high" in dependence from those that are relatively "low" in dependence. Since the hypothesis suggests that there will be greater homogeneity among highly dependent firms when compared to firms with low levels of dependence. It is essential to look at groups of firms rather than comparing across individual organizations.

There are several methods available to perform such partitioning, but in this study it is essential to partition firms based on two variables (current and intended levels of dependence) that are measured with very different scales; hence simple partitioning based on means and standard deviations would not be adequate. To accomplish this partitioning, I used cluster analysis. Cluster analysis is a statistical technique that attempts to identify similar groups of objects or subjects based on a set of attributes (Aldenderfer and Blashfield, 1984). The researcher can specify the variables to be used in creating the clusters and the clustering algorithm computes distances between subjects based on variables of interest. This allows for identification of groups of subjects with similar features which are distinct from other groups within the study. Cluster analysis has been used in strategy research to identify strategic groups (McGee and Thomas, 1986; Hatten and Schendel, 1977) as well as in research on institutional structures (Oliver, 1988).

The CLUSTER procedure in SPSS-PC was used to generate clusters of firms based upon current and intended dependence. Ward's minimum variance method of clustering was used, which has been reported to have superior accuracy as compared to other methods (Aldenderfer and Blashfield, 1984). In this procedure, the distance between firms is based on the squared Euclidean distance, which is the sum of the squared differences for each variable. Actual formation of clusters was based on an agglomerative hierarchical procedure, in which clusters are formed by grouping cases together until all cases are members of a single cluster. At each stage of the process, a coefficient is displayed corresponding to the

distance measure used which can be used to determine how many clusters should be created from the data.

The cluster analysis of the firms in this study indicated the presence of three distinct groups; the difference between the 2 and 3 group solution was 91.73, while the difference between the 3 and 4 group solution was 22.51. Applying Mojena's Rule One (Aldenderfer and Blashfield, 1984) to the process to the fusion coefficients from the cluster analysis suggested that the 3 group solution was optimal. A series of t-tests was performed on the three groups to determine if there were meaningful differences in the mean scores for current sales and intended future sales measures. The results indicated significant differences between Group 1 (called the High Dependence group) and Group 3 (the Low Dependence group), but no significant differences between Groups 1 and 2 or between Groups 2 and 3 were found on the variables of interest. Therefore, for analytic purposes a comparison was made of the firms in Group 1, the High Dependence group, with those of Group 3, the Low Dependence group.

Table 1: Description and Measurement of the Strategy Variables in the Study

Strategy Variable: Description	Formula/Scale
Product Competition Variables –	
1. Product Quality Average: Percent of products superior to competitors products from the customers' perspective minus the percent of products inferior to competitors products from the customers' perspective.	% Perceived Superior − % Perceived Inferior
2. Relative Price: The average level of selling prices of the firm's products and services relative to the average price of the three largest competitors.	5-point scale from 1 (Prices more than 10 percent lower) to 5 (prices more than 10 percent higher)
3. Market Share: Sales of the business as a percentage of sales in the served market (firm's estimation).	$\frac{\text{Firm Sales}}{\text{Total Industry Sales}}$
Production/Investment Variables –	
4. Inventory/Revenue Average: The total average inventory of the firm divided by the firm's total revenues.	$\frac{\text{Inventory}}{\text{Firm Sales}}$
5. Plant & Equipment Newness Average: The net book value of plant and equipment divided by gross book value of plant and equipment.	$\frac{\text{Net Book Value, PP\&}E}{\text{Gross Book Value, PP\&}E}$
6. Investment/Revenue Average: The net book value of plant and equipment divided by firm sales.	$\frac{\text{Net Book Value, PP\&}E}{\text{Firm Sales}}$
Efficiency Variables –	
7. Sales/Employee Average - Total firm sales divided by the number of employees.	$\frac{\text{Firm Sales}}{\text{Number of Employees}}$
8. Profit/Employee Average - Net Profit divided by the number of employees	$\frac{\text{Net Profit}}{\text{Number of Employees}}$
Marketing Variables –	
9. Sales Force Expenses/Revenue Average – Sales force expenses divided by total firm sales	$\frac{\text{Sales Force Expense}}{\text{Firm Sales}}$
10. Media Advertising & Sales Promotion/Revenue Average – expenditures for media advertising, catalogs, exhibits, displays, and temporary price reductions for promotional purposes divided by total firm sales.	$\frac{\text{Advertising \& } \textit{Promotion Expense}}{\text{Firm Sales}}$

Control for Exogenous Variables: Firm Size, Product Category, and Production Method. Given the nature of the research, it was important to try and control for any exogenous variables that might influence the results. Three were viewed as particularly germane to this study: firm size, the product category, and the production method used. Size was important because larger firms may be less susceptible to influences from customers than smaller firms who lack the resources necessary to survive a loss of revenue from a dominant customer. The product category was likewise important, as firms that provide more "commodity" type products such as screws, bolts, and springs might be more dependent on OEM customers than firms providing highly specialized products such as electronics. Finally, the production method employed could also influence dependence, since firms with specialized production methods would face less threat of backward integration and pressure from OEMs than would firms with standardized machinery and processes. For each of these variables, the 2 groups in the study were analyzed using a chi-square test for categorical variables (product type and production method) and a t-test for firm size, a continuous ratio variable. In all cases, the results were not significant, suggesting no meaningful differences existed between the groups for these 3 variables.

Test Statistic: Hartley's FMax. Since the research hypothesis suggested that there would be greater homogeneity of strategy among highly dependent firms, the test statistic for this research is the variance in the strategies pursued by the two groups. The lesser the variance in strategies, the greater the homogeneity; and the higher the variance, the greater the heterogeneity. Hence it is the variance in strategies among the test groups that is the meaningful basis for comparison and test of the research hypothesis.

For the hypothesis to be supported, the variance of the strategy variables for the "high" dependence group must be lower than and significant different from the variance of these same variables for the "low" dependence group. Whether the variance between the groups is higher or lower can be observed from inspection of the data. The issue is whether the difference is significant; to determine this, it is necessary to test for the homogeneity of variance. Generally such tests have been used to determine if the variance among experimental groups is homogenous, as is required for many statistical procedures such as analysis of variance (ANOVA). For this research, though, the issue is one of differences in variance between groups, and the use of the test for homogeneity of variance is the primary analytic method. Though relatively infrequent in the organization sciences, there are studies that have employed such methods (Games et al., 1972). There are several tests available for homogeneity of variance, one of the more prevalent being Hartley's FMax statistic, which is recommended for use when sample sizes are approximately equal. The FMax is seen as sufficiently sensitive for analytic purposes (Winer, 1971) and has been found to be quite robust to assumptions of non-normality as well as having high statistical power (Games et al., 1972). Since the results of the cluster analysis in this instance indicated that this condition was met by the data, the FMax was the test statistic employed.

Table 2: Homogeneity of Strategy: Variance in Strategy as a Function of Firm's Dependence

		High			Low		Hartley's	Hypothesis
	Mean	Variance	N	Mean	Variance	N	FMax	Supported?
Independent Variables:								
○ Current Dependence	0.58	0.88	49	0.36	0.10	46		
○ Projected Dependence	3.31	0.22	49	0.43	2.34	46		
Dependent Variables:								
Product Competition Variables -								
○ Product Quality Average	94.83	67.57	46	95.80	106.63	44	1.578 (n.s.)	No
○ Relative Price	3.35	0.44	49	3.28	0.92	46	2.091*	Yes
○ Market Share	10.83	119.67	36	15.62	242.71	34	2.028*	Yes
Production/Investment Variables -								
○ Inventory/Revenue Average	5.43	23.61	40	8.33	58.80	41	2.490**	Yes
○ P&E Newness Average	0.57	0.03	34	0.06	0.03	36	1.000 (n.s.)	No
○ investment/Revenue Average	21.84	101.76	35	28.03	310.78	39	3.054**	Yes
Efficiency Variables -								
○ Sales/Employee Average	100.27	2262.78	49	105.84	1628.80	46	1.389 (n.s.)	No
○ Profit/Employee Average	3.73	15.39	31	4.41	52.10	36	3.385**	Yes
Marketing Variables -								
○ Sales Force Expenses/Revenue Average	2.99	3.50	43	3.47	9.96	44	2.846**	Yes
○ Media Advertising & Sales Promo./Revenue	0.41	1.77	41	0.35	0.19	43	9.316**	No
							* = p<.05	
							** = p<.01	

Results. The results of this study are displayed in Table 2 above. There were 49 firms identified as having high dependence on OEM customers, with an average of 58% of firm revenues coming from sales to automobile OEMs and a projected increase in dependence in coming years of 3.31, or a slight intention to increase revenues (a score of 3 indicating a neutral position or no change in dependence). Forty six firms were found in the low dependence group, with an average of 36% of revenues from sales to automobile OEMs and a projected decrease in dependence in coming years (a mean score of 2.58, with a score of less than 3 indicating a decrease in dependence). Note that there was some variance in the sample size when comparing individual measures, as some firms did not fully report the data.

The results for the Product Competition variables indicated general support for the hypothesis. Although there was no difference in the variance in product quality (FMax = 1.578, n.s.), firms with high

levels of dependence had significantly less variance in the Relative Price measure (FMax = 2.091, $p < .05$) and the Market Share measures (FMax = 2.028, $p < .05$). This indicates greater homogeneity in strategy for these market positioning strategy variables.

The Production/Investment variables also provided general support for the hypothesis. Inventory/Revenue Average and Investment/Revenue Average both indicated less variance for the high dependence group when compared to the low dependence firms (FMax of 2.490 and 3.054 respectively, $p < .01$). However, the difference in variance for the P&E Newness Average was not significant (FMax of 1.00, n.s.).

Efficiency Variables and Marketing Variables had mixed results. The Sales/Employee Average showed no significant difference in the variance between the high and low dependence groups (FMax = 1.389, n.s.), but the Profit/Employee Average was significant and in the predicted direction, with greater homogeneity in the high dependence group (FMax = 3.385, $p < .01$). This was also true for the Marketing Variable of Sales force Expenses/Revenue Average (FMax = 2.846, $p < .01$); however, the variance in Media Advertising and Sales Promotion Expense/Revenue was significant but in the opposite direction from that predicted by the hypothesis, with the low dependence group indicating less variance in strategic resource deployment (FMax = 9.316, $p < .01$).

Overall, though, the results give general support to the research hypothesis. Six of the ten measures of firm strategy showed significantly less variance among auto supplier firms that were highly dependent on the automobile OEMs. Three of the measures were not significant, and only one was significant but in the opposite direction from that predicted by hypothesis. In general, firms with high levels of dependence tended to exhibit greater homogeneity in the strategies pursued than firms with low levels of dependence.

DISCUSSION

The purpose of this study was to determine if institutional forces for isomorphism found in interorganizational patterns of relationships might cause firms to pursue similar strategies. Dominant perspectives on strategy urge managers to seek strategies that are heterogeneous by emphasizing such constructs as competitive advantage, distinctive competence, and differentiation. Despite these urgings, it can be observed that firms frequently pursue similar strategies and strategic behaviors (e.g., Cool and Schendel, 1988; Hatten and Hatten, 1987; Hatten and Schendel,1977). While the bias in research is toward identification of differences in variables, understanding the forces that lead firms toward similarity might also be a worthwhile research agenda.

The results from this study indicate that institutional arrangements, found within the interorganizational relationships that characterize the environments of most organizations, may in fact cause firms to choose similar strategies. In particular, this research suggests that coercive isomorphism arising from common dependence upon a limited group of customers may have a role in affecting the strategic decisions of managers in market positioning and in strategic resource deployments. Auto suppliers with high levels of dependence on automobile OEM customers for sales revenues showed a tendency toward greater homogeneity (that is, less variance) in key measures of firm strategy.

With respect to Product Competition variables (i.e., market positioning), greater homogeneity was found in firm pricing strategies and in market share. In general, firms facing greater coercive pressure tended to price at or above market average, while pricing strategies of firms with less coercive pressure were much more heterogeneous. Highly dependent firms also had greater homogeneity in market share. While there was less variance in product quality, the difference was not significant; this might be attributable to the fact that the quality standards for the industry are well established and documented, and suppliers unable to meet the minimum standards are not allowed to participated in the industry. For example, requiring firms to meet ISO certification standards or other quality metrics would tend to lead to similarity across all firms, as these standards are the “table stakes” necessary to participate in the industry and therefore are common to all firms. Note that this does not detract from the concept of institutional isomorphism and homogeneity of strategy; it may in fact support other forms of institutional isomorphism, specifically normative isomorphism in this particular case. However, it does suggest that

coercive pressures and firm dependence does not affect product quality strategy within the auto supplier industry.

Production/Investment strategy variables gave somewhat stronger support to the research hypothesis. Both the Inventory/Revenue Average and the Investment/Revenue average measures of strategy had greater homogeneity in highly dependent firms than for firms with lower levels of dependence. Auto supplier firms tended to behave similar with respect to working capital management strategy (in the case of inventory levels) and capital investment strategy (in the case of investment in plant and equipment). The Plant and Equipment Newness average measure was not significant; but this might be due to the measure, which is defined as net book value divided by gross book value. For both groups, the variance in strategy was identical. However, it might be noted that the P&E Newness average was much higher for the highly dependent firms that for the firms with low dependence. Perhaps coercive pressures in this case tend to drive firms to continuously invest in new capital.

Efficiency strategy variables gave mixed results. While sales per employee were not significantly different between the two groups, there was much less variance (and therefore greater homogeneity) in profit per employee. Since supplier firms that are highly dependent on the auto OEMs face considerable pressure from the customers to maintain or reduce costs, operating efficiencies (which would be more reflected in the profit measure than in the sales measure) may be much more of an issue for these firms and thus there is more strategic emphasis placed on this behavior.

Marketing strategy variables likewise exhibited mixed results with respect to the research hypothesis. Sales force expenses as a percentage of firm revenue showed much less variance for highly dependent firms than for firms with low dependence. This may be due to the fact that firms with relatively fewer customers (in the case of the auto OEMs) do not have the need to market products and services as broadly as do firms with low levels of dependence. As a result, firms that are involved in a wide array of industries may require a larger sales force to address the marketing needs. Conversely, Media Advertising and Sales Promotion expenses as a percentage of firm revenues showed far greater heterogeneity among the highly dependent firms.

Taken as a whole, however, these results suggest that institutional isomorphic processes may in fact be a powerful force for homogeneity of strategy. Coercive pressures on supplier firms in highly dependent relationships with the auto OEMs appears to lead to greater similarities in these firms' strategies. Market positioning and a variety of strategic resource deployments are more homogeneous or firms in high dependence relationships.

These results are subject to several limitations. This study was conducted within a single industry group (auto suppliers), and until these efforts are conducted in other firms in other industries, caution must be exercised in generalizing from the results of this preliminary inquiry. There are certainly features of this industry that are unique in terms of the supply base (for example, the extensive use of supplier certification programs) that would tend to lead firms toward similar strategic decisions. Although the study did capture a wide array of supplier firms in size, products manufactured, and manufacturing processes, these firms still were all competing within a single industry. It would be productive to see if these results would hold in other industry groups.

In addition, this study only measured 10 dimensions of firm strategies. As noted, strategy is a highly multidimensional construct (Hambrick, 1980; Snow and Hambrick,1980). There are many more aspects of firm strategies that might be examined. In this study, the strategy variables tended to be business-level strategies; this was done because it was already determine that the study would examine firms in a single industry, and hence corporate-level strategies were not relevant. However, this research needs to examine other levels of organization strategy as well as additional measures of the strategy construct in order to develop a more thorough and comprehensive understanding of strategic homogeneity.

Then, too, these results are limited by the nature of the survey, which was done at a specific point in time and required participants to indicate certain perceptions of firm strategy. While the "hard" measures based on financial data are somewhat more reliable (e.g., Profit per Employee; Inventory/Revenue Average; Sales Force Expense/Revenue Average) other measures (e.g., Relative Price; Market Share) are more perceptual in nature and may subject to bias in interpretation by the respondents. Surveying CEOs is

intended to limit the effects of such bias (particularly at the strategy level), but such biases may be present nonetheless.

Of course, these limitations also provide potential for further study to address these issues. This is only an initial investigation of this particular research issue; there is considerably much more research need and opportunity. Future research might expand the research to include other institutional process for isomorphism, such as uncertainty and mimetic isomorphism, and the study of interorganizational relationships, industry environment, and normative isomorphism. Then, too, there is a need to expand this research beyond a single industry and determine if these results would be found in other industries and markets. Furthermore, it would be useful to expand the measures of strategy to determine which elements of firm strategy are most susceptible to institutional pressures and under which conditions. Clearly, this is a rich area for additional research and exploration for the strategy field.

Also, research might address the conditions in which strategic homogeneity is advantageous and those in which heterogeneity is more effective. By assuming that the focus of strategy is on differences, the field has long neglected those potential effects of strategic similarity. There is a need to establish boundaries for competitive advantage and distinctive competency and to determine when firms might be rewarded for being strategically similar to others. A potential area for future research might be to establish the conditions for strategic homogeneity and to determine how such homogeneity might contribute to enhanced firm performance.

For strategists and for organization managers, this research has additional implications. Maximizing firm performance may require firms to be similar in strategy to others in key areas of strategic activity, while maintaining a competitive advantage in others. Which areas are most conducive to strategic homogeneity? When should managers copy other firms or play "follow the strategy leader" in order to enhance effectiveness and efficiency? Are there conditions under which firms should in fact pursue common strategies, and if so, how does this affect overall industry profitability? These and many other questions are raised as a result of this preliminary study.

The bias in strategy research has been toward heterogeneity, understanding the differences in strategy that lead to differences in organization performance. This study suggests that it may prove equally important to examine strategic homogeneity and to understand why so many firms behave similarly with respect to strategy. The question of strategic homogeneity is literally in the nascent stages and offers a potentially rich avenue for future research and theoretical development. It is hoped that the results of this initial inquiry will encourage researchers and practitioners to continue to pursue these issues and to increase the understanding of organization strategy.

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