COMMENTARY

COASE ENCOUNTERS OF THE SOCIOLOGICAL KIND: ORGANIZATIONAL FIELDS AS MARKETS

Brian Uzzi

INTRODUCTION

Herbert Simon (1991) has alerted us to the fact that in classical and neoclassical economic theory, the "market" is always at the center of the stage. The other actors on stage—workers, firms, property owners, governments, and sometimes others—have similar abstract relationships to the market. In other words, the market ultimately regulates the actions of all the other actors, who are themselves driven by the same narrow motives: self-interest and profit-maximization. Consequently, be it firms or workers, the role they play is secondary and interchangeable in the story line of how resources are allocated and fortunes made. The market, on the other hand, plays the dominate role as both anti-hero and hero. As anti-hero, the market creates competence-destroying technology and frustrates efforts to sustain competitive advantage. As hero, the "wisdom of the market" disciplines irresponsible firms, breaks path-dependencies, and ensures efficient resource allocation.

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In a surprising article titled "The Nature of the Firm," Ronald Coase (1937) posed an apparently innocent question that ignited a small movement against market theory. Coase asked, "Why do firms exist?" If the market economically distills the important information about transactions and assures that the fittest survive, then why does economic activity occur within the skins of firms, which are in turn run by minions of managers who are paid to coordinate economic exchange? Coase's now famous answer was that the transaction costs of using the price system are better minimized by firms than by the spontaneous governance of the market.

The papers in this section on the embeddedness of interfirm relationships pose questions that echo Coase's, but are more comprehensive—even if less tractable with current technologies. They question how interfirm, rather than intrafirm, arrangements affect competition and market allocation processes. Even though the questions they pose are analogous, the answers delivered by these chapters suggest a fundamentally different rejoinder to the Coaseian problem of markets. In the "embedded" perspective adopted by these papers, markets are better understood as "organizational fields" that operate on an embedded logic of exchange rather than a "market logic." Unlike the market, the organizational field is not comprised of atomistic relationships but of networks of actors that are connected by non-market relationships; and which allocate resources by mechanisms that operate differently from the logic of transaction cost minimization or spontaneous governance.

The implications of this approach to understanding the environment of interfirm relationships are both exciting and sobering. They are exciting because they demonstrate how powerful the concept of embeddedness can be in revealing important theoretical and practical features of strategy that are in subtle ways so obvious that they have tended to be overlooked in current work. They are sobering because thinking about economic and strategic action in terms of embeddedness presents new research challenges.

ORGANIZATIONAL FIELDS AS MARKETS

Throughout most of these papers the organizational field concept is advanced as the chief organizing construct for understanding the unique context of interfirm competition. The broad implication of this approach is that an organizational field is an alternative type of market allocation system possessing a social structure that differs from the traditional neoclassical market. This endeavor is no small task, and the authors make no claims that this is the main goal of their papers. However, in reading these chapters, I was struck by the various commonalities of the papers in along this theme and with the important implications an alternate model of market allocation processes would have for strategic theory. In various forms, this undertaking has progressed in sociology, where the idea of an organizational field has been undergoing refinement (DiMaggio & Powell, 1983; Bourdieu, 1992;

White, 1992). The papers in this section build fruitfully on this work and suggest ways in which organization theory helps address problems of strategy, as well as how it extends work in strategy. My aim is to illustrate how the varied ideas in these papers reflect the idea of an organizational field as a social mechanism of market allocation, as well as how sociological concepts such as roles, status, and structuration suggest implications for strategic theory which follow from the arguments in these chapters.

Actors and Relationships

The first issue these papers raise concerns who the actors in an organizational field are and what their ties are. This issue complicates the simple renderings of the neoclassical model. First, the simple, interchangeable characterizations of the different actors in the neoclassical model are rejected. In the organizational field perspective, each player has distinctive competencies and faces unique constraints. This view is valuable because it directs attention away from a central all-knowing, all-powerful abstract actor called the market, to the set of concrete actors that shape organizational behavior. Amburgey, Dacin and Singh, for example, show that regulatory agencies (e.g., the Food and Drug Commission and Patent and Trade Office), financial services, suppliers, and product and resource consumers all play distinctive roles in shaping the biotech field. While technology and intense, market-based competition among biotech firms may stimulate the creation of new forms of biotech life, it is the regulatory agencies that have the sole right and legitimacy to define what new forms of life are commercially permissible (patentable) in the field. Gimeno and Woo show that the same actor can take on multiple roles that shift and change from supplier to buyer or partner to rival over the course of the relationship. In this case, not only is the field comprised of distinct and non-substitutable actors, but the relationships among the actors are multiplex.

From a strategic perspective, it seems critical to address the fact that the flow of resources between and among these sets of actors is not strictly governed by the invisible hand, even when firms transact across a market interface. As a result, analyses of change, mortality, or multipoint competitiveness cannot be confined simply to the number of biotech firms in the industry, the distinctive capabilities of other biotech firms, or dyadic economic ties. We need to model the structure of ties in which biotech firms are embedded and how this structure channels resources and affects microbehavioral decision-making processes. This raises questions about the utility of using dyadic frameworks to study interfirm transacting (e.g., agency theory), top management teams, CEO-board member ties, and corporate governance.

While the above conclusions are not the most novel in regard to the network structure of organizational fields, they are the most fundamental because they break new ground for the analyst. For example, if the initial link between biotech White, 1992). The papers in this section build fruitfully on this work and suggest ways in which organization theory helps address problems of strategy, as well as how it extends work in strategy. My aim is to illustrate how the varied ideas in these papers reflect the idea of an organizational field as a social mechanism of market allocation, as well as how sociological concepts such as roles, status, and structuration suggest implications for strategic theory which follow from the arguments in these chapters.

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firm start-up and the venture capitalist is due to the structure and quality of the biotech firm's network, and the connection to the right venture capitalist in turn makes possible the connection to the right kind of financial advisor, and it is the right kind of financial advisor that makes possible the right contact in a legal firm, and it is the right combination of financial advisor and venture capitalist that links the biotech startup to the right university lab, and so on, this suggests that a range of heretofore anonymous market phenomena can be conceptualized and analyzed in relational/network terms.

Key organizational questions such as the sources of the liability of newness, or the rate of exit and entry in an industry, could be modeled from a unified network perspective. Packages of technologies, such as vacancy chain analysis (White, 1970), could be adopted to analyze mobility and change in an organizational field. Survival and competitiveness would depend on locating the right portal of entry to a chain of serial, connected, resource-rich positions—enabling a firm to progress from a state of dependency or resource instability at its entry point into the chain to a state of progressively greater independence or resource stability, as it finds its way to the center of the network. The structuration process in strategic alliances could also be modeled as a function of network density, subgroup cliqueness, or the number of local bridges between and among actors in the field.

Although these analyses might not be apt for all types of industries, they seem particularly important for entrepreneurial, intellectual property, and service industries that rely on network ties to function. From a strategic theory perspective, these types of industries seem conspicuously important because they represent a major growth segment of the world economy, and they also are precisely the types of organizations that need novel strategic innovations to survive due to their minimal slack resources.

Roles as Sustainable Strategic Resources

A major implication of the organization field-as-market concept builds on the idea that ongoing relationships develop over time into structured patterns of exchanges, viz., roles. In these papers the role concept is used in several related arguments: roles organize expectations about another player's actions, define a firm's identity, and enable claims on resources. As a class of arguments, the role concept embodies strategic significance: roles are organizational resources (see Baker & Faulkner, 1991).

For example, if firms respond to roles and use them to categorize other firms as friend, foe or neither, or use them to develop rational expectations of a competitor's strategy, a firm may gain strategic discretion over rivals by enacting a role. Such a strategy has characterized the success strategy of Computer Associates, one of the largest and least visible developers of software. Computer Associates purposely has downplayed its size and public image as a major software developer in order to avoid a head-to-head rivalry with Microsoft—a rivalry it knows it could

not win. This suggests that defining or adopting a role and role playing (deceptive signaling) are components of competitive strategy. The most visible ramifications of this approach seem to be for the resource-based view of the firm, which has focused on tangible organizational resources and competencies. Consequently, understanding how roles are developed, managed, and changed become key strategic management questions.

Rent and Capitals. A corollary of the view of roles as resources is implied in Amburgey et al. and Garud and Jain's papers. Both papers suggest that roles grant access to critical resources by furnishing a player the title to critical resources. In the case of the biotechnology industry this is seen clearly in the right of the Food and Drug Commission to define what forms of life are commercially exploitable. Organizations may endeavor to create new forms of life through planning or chance variations, but only the Food and Drug Commission can license the "product" or levy fines against transgressors. In the computer networking industry, key actors in the field, rather than the market, play the primary role in legitimating the technological configurations that will be heralded as industry standards, and which in turn attract investment and generate profits for the other players in the field.

A subtle issue that has not yet been exploited in strategy is how roles as resources appear to generate a particular kind of return that can best be described as rent. Thinking about roles as primarily rent generating and "tangible" organizational characteristics such as technology as profit generating suggests one refined way to use the sociological concept of roles in strategy. While numerous definitions of rent exist, all share the idea that it is a payment to the owner of a resource for the use of that resource. The classic example is the rent paid to a landowner for the use of the land. Rent is that component of payment to the landowner for the use of the land that does not compensate the landowner for past investments or expenditures of effort. It is different from profits due to investments or human capital because the landowner does not sacrifice consumption or expend effort for her part of the payment—it is gain due to the ability to control title to the resource.

In a stratified system such as an organizational field, rents need not be restricted to land or tangible assets. They may be obtained from any productive asset that can be given title. In the above examples from biotechnology and computers, the governing bodies did not incur the costs to create the new biological and technical innovations, but held the right to assign or withhold title for this use. In essence, their position in the social structure of the organizational field enabled them to generate rents.

If rents are generated by rules, the strategic question that follows is, What assets do players use tactically to derive rents from their roles? Although numerous socially rooted assets can be discussed (Bourdieu, 1992), the two major classes of productive assets reflected in these papers are social capital (Coleman, 1988) and cultural capital (Bourdieu, 1992). Social capital adheres in the relationships

between and among actors. It creates rents when it is exclusively accessible through specific ties. Its strategic significance increases in direct proportion to the need of competitors to differentiate themselves when they have similar human capital or organizational characteristics. Burt's (1992) work in the new sociology of strategy literature has concentrated on the access, timing, and referral benefits of social capital. When this work is linked Gimeno and Woo's game theoretic approach, it raises the question as to whether economic multiplexity not only widens the bases for interfirm cooperation, but, by-the-same process, increases a player's social capital. If this is the case, then the more types of roles a firm plays in a relationship with an alliance partner, the more it promotes cooperation and reduces its level of substitutability—underscoring another limit to the strategic benefits of using only arm's-length ties to manage interfirm exchanges.

Cultural capital includes a variety of factors (Anheier, Gerhards, & Romo, 1995). It involves the use and manipulation of business and cultural symbols to signal quality (a fashion designer locates its headquarters in New York rather than New Jersey to signal fashion sensitivity). It includes claims on creative and intellectual property (licenses, patents, credentials) or title to others' reputations (Baker & Faulkner, 1991). And, for entrepreneurs and organizations, cultural capital can prologue distinctive competencies or sustain competitive advantage. The history of the electrical utility industry, for instance, shows that the lock-in and longevity of central power stations as the technological standard was not a result of its technical superiority over the competing technology of decentralized power generation (analogous to home furnaces), but to Thomas Edison's and Samuel Insull's relatively more effective use of cultural and social capitals (McGuire, Granovetter, & Schwartz, 1993). The far-reaching strategic implications of this work is that key technological standards may not result from competitive forces that select the technically inevitable standard. Rather, standard setting is a socially constructed outcome determined by the varying amounts of cultural capital possessed by key actors. Particularly, under conditions where multiple equilibrium exist, cultural and social capital may play more important roles than the market. The implication of this argument is that by knowing the capital currencies of the organizational field (i.e., social, cultural, or economic), one can better predict the technological trajectory of innovations and industry standards.

The Garud and Jain paper (pp. 387-406) illustrates this point and extends ideas of how networks composed of an integrated mix of embedded and market relationships produce optimal economic outcomes (Uzzi, 1996a). They show that technological advancement in the computer LAN industry is the joint outcome of turbulent market competition and the key industry players who use their social and cultural capital to set technical standards consciously. Their insight also shows that if unbridled market forces dominate the embedded networks of key players, then investors resist financing the high R&D costs of new technologies because there is no way to estimate market trajectories or investment returns. Similarly, if embedded networks of actors dominate market forces, then path dependencies and

other inertial forces ensue that prevent existing technological systems from migrating to new functionalities.

The virtues of social and cultural capital, and of embedded network relationships, however, suggest numerous challenges. One challenge is that there is a gigantic free-rider problem in the making. Firms may hesitate to exit inefficient relationships because it could damage other relationships in the network, or a single dimension of an indispensable multiplex tie. This later type of network bind appeared to be a factor in Ford's bailout of Mazda. When Mazda fell on hard times, Ford could not simply cut off its equity tie with Mazda because Ford was tied to Mazda by a strong joint development tie—Ford relied exclusively on Mazda to design the critical elements of its drive-trains and compact and sports car lines. This raises the question of how a player might de-multiplexify a network tie or create multiplex ties that have a decomposable, decoupled architecture of complexity (Simon, 1962; Weick, 1982).

Operationalizing Roles

The concept of a role also poses numerous measurement challenges. First, there is the question of operationalizing roles. In network analysis, roles can be empirically derived from the number of structural equivalent positions or the number of cohesive groups in a block model. The results of these methods, though empirically rigorous and data intensive, often depend on the particular computer algorithm and the analyst's eyeballing of the data. The integrative conceptual work on structural equivalence and cohesion has also focused more on which methods better predict key outcomes such as diffusion and competitive interplay, than on the theoretical basis for using one method as opposed to another (Oliver, 1988). Second, the concept of an organizational role raises the question of barriers to role adoption. For example, certain social roles are limited to men and others to women; most roles have upper and lower age limits; and others discriminate by gender, race, or other ascriptive characteristics. Consistent with this logic, Porac and Rosa found that roles in the Scottish knitwear industry are based on a cluster of ascriptive characteristics that correlate with organizational size, technology, and location. If this is the case, what ascriptive characteristics promote or inhibit role mobility? Similarly, if roles are not simply enacted by players, but are a mixture of self-enactment and the actions and reactions of the other firms in an organization's network, then the strategic autonomy implied by the concept of an organizational role is bounded by the fact that it is controlled by a web of affiliations that are beyond the direct control of the firm. If we are confined to defining the roles that make up an industry empirically, how much data do we need on organizational characteristics to do the job adequately, and will a set of attributes be generalizable across industries and cultures? What kind of artificial barriers of entry and competitive inefficiencies might be negative by-products of roles?

Cognition and Motives

In Porac and Rosa's model, firms in the same industry are not necessarily competitors, even though they may recognize each other as producing substitutable products. Instead, competition may be much more localized among sets of actors who make competitive decisions that are "... cognitively embedded in belief systems that summarize organizational forms, give substance to projections of cost, revenue, and demand, and establish the boundaries of markets themselves" (Porac and Rosa, this volume). As a consequence, firms do not look to price and quantity data to calculate the perceived best strategy (Penrose, 1954), but instead reference other firms in similar positions or 'roles' in their network of relationships that themselves may span many industry or organizational categories (White, 1981).

Porac and Rosa's primary goal in developing this view is to uncover the cognitive process by which rivals know "who they are" and "who their competitors are" rather than to focus on how this view advances or repudiates strategic theory, Yet, from the perspective of strategic management, several findings are implicated. First, it suggests that conventional competitor analysis overlooks the unique competitive dynamics that occur at the more proximate, and presumably determinant, level of the network or local niche. A more far-reaching implication of this work and others in its family (Baum & Mezias, 1992) is that empirical "tests" of economic and ecologically based strategic theories have been misspecified because the network content of strategy has been overlooked. While this level of analysis problem is not unique to the discipline of strategy, it is particularly conspicuous in this area because Porac and Rosa's findings suggest that managers regard the world and behave in ways that are inconsistent with the aggregated level of analysis of economic and population ecology based strategy research. The challenge seems to be to understand how and when managers and researchers can know what level of aggregation is most revealing of the nature of the phenomena.

Thinking in terms of organizational field processes as opposed to strictly market processes, also suggests new lines of fruitful inquiry on the motivations of top level decision makers. The Gimeno and Woo, chapter point out a number of interesting strategic behaviors and motives that arise when interfirm relationships are multiplex (Coleman, 1988; Uzzi, 1996b). Multiplexity occurs when the same parties simultaneously play the roles of rivals, partners, buyers or suppliers to each other. The insight of Gimeno and Woo is that typical strategic games, such as hostage taking and competitive forbearance, change when relationships are multiplex because the basic logic of arm's-length exchanges shifts from opportunism with guile to one of searching for positive sum outcomes that benefit both parties or the entire network of relationships. Does this suggest that cooperative repeated games require embedded relationships of a multiplex type? Or that embedded ties help overcome aspects of individual bounded rationality by introducing more pertinent and proprietary information in the interfirm exchange? These are interesting speculations that both Axelrod (1984) and Kreps (1990) have mused upon as a poten-

tial innovation for game theory, which has remorsefully found the idea of nonselfish motives attractive, but intractable.

Structuration

An interesting cross-current running through this view is that the competitive landscape of the field doesn't resemble a rigid, over-institutionalized structure that is punctuated by acognitive conformity or symbols without substance. Rather, the field is viewed as a dynamic and tumultuous competitive arena. Like Schumpeter's (1950) vision of economic behavior, the dense network ties of the field are both a cause and consequence of creative destruction—the continual invention of specialized markets that are short-lived but high return. The implication is that Schumpeterian-like competitive dynamics are enabled by embeddedness. Embedded networks offer competitive advantages of precisely the type Schumpeter conjectured: entrepreneurial firms reorganizing a changing network of talent, styles, and corporate resources.

This suggests that subsequent lines of inquiry might examine how competitive practices arise and are sustained in relation to an organization's ability to access and constantly reconfigure a pool of resources and network partnerships that reward exploration, rather then the exploitation of partners. For example, the Amburgey et al. analysis shows that competition in the biotech field is based on the strategic capture of economies of time rather than traditional scale and scope economies. Firms that excel are able to bring new products to market and capture market share faster than their rivals can turn out competing products or reverseengineer products that can be sold at prices that do not have to recoup R&D costs. Interestingly, this process is enabled by the presence of embedded ties between firms. Amburgey et al. found that, "...the aggregate level of cooperation decreased the intensity of the capital race..." These conclusions not only show that embeddedness is tractable, given standard tools of game theory, but that an embeddedness approach turns decisive strategic processes, such as learning races, on their head. Those firms that aim only to finish the race may be able to work solely within "defector" logic of the market, but those that wish to finish first must be adept at both the logic of markets and embeddedness.

While the literature on how organizational fields allocate resources and direct consumption/distribution has looked at how networks beget networks within an industry category, it has yet to examine from a strategic perspective how structuration of the field takes place among networks of players that span industry categories, who control different capitals (cf. Palmer, Friedland, & Singh, 1986; Gerlach, 1992), or that takes the field as the unit of analysis. This "left-censoring" problem, common to much network analysis, takes the structure of the system as a given rather than as a variable to be explained. It would be interesting to examine whether the process of increasing network density within a field is a product of blind mimicry, powerful actors pressing their interests, or rational calculation

(e.g., "As more and more competitors collaborate, the 'go-it-alone' posture becomes riskier and riskier" (Amburgey et al., this volume). If it is power that drives the change, then one might hypothesize that the structuration process will be isolated within domains of unequal power distributions, occur slowly, ensue conflict, and produce an inherently unstable solution. Conversely, if it is rational action that drives the change, then the structuration process might be a relatively rapid and stable solution.

Boundaries

A final challenge of thinking about organizational fields as markets is the boundary problem. Once we begin to think in network terms, it becomes increasingly difficult to identify and decide what criteria delimit relevant players. Should the "... totality of relevant actors" be included as suggested by DiMaggio and Powell (1983, p. 148), which would create logistical and practical financial problems similar to those of simultaneously collecting data on several populations? Or, should criteria be developed for weighting and selecting dominant actors, which might place the cart before the horse in the absence of theory on the nature and functioning of organizational fields?

While answers to this problem may take either side, it may be best to view the problem from another perspective and to table the conventional idea of boundaries altogether. One way to think of the problem, for example, is to view it as analogous to the difference between flat data files and relational databases. Flat files are normally based on categorical distinctions. They are lists of units that can be defined along some criterion. Firms in the same SIC code, same region, or same size band; managers in the same executive education class; or banks that specialize in small business loans are all grouped together. Knowing the boundary of a flat file is easy. Its simply a count of the number of units. In contrast, identifying the boundaries of a relational database is not only more difficult, it makes less sense to do since the boundaries are never fixed but depend instead on the "sort" criteria selected by the analyst. The data have not changed; only the structure of the data has changed. This suggests that the boundaries of an organizational field cannot be thought of in a conventional sense. Rather, they can be defined only by careful industry studies that identify the range of pertinent "sort" criteria. This suggests that the boundaries of an organizational field will naturally vary with the perspective of the researcher and the system of relationships she examines.

On the other hand, from the vantage point of positivist research, this approach may side-step one issue, but evoke at least two classic problems of statistical research in the process: specification error and sampling. Just as the conventional view may ignore important linkages, an organizational field perspective may misspecify key linkages by being under- or over-inclusive, or by simply falling back on categorical distinctions (e.g., director interlocks among the Fortune 500) that are based on convenience or other idiosyncratic factors. Similarly, sampling a subgraph

from the overall field could potentially bias the sample by systematically overlooking high leverage ties. In this regard, more theory is needed on the statistical properties of shifting and stratified populations, as well as on analyzing and generalizing from a sample (i.e., a subgraph) drawn from an organizational field. Although present approaches to these issue have made progress (Mizruchi, Mariolis, Schwartz, & Mintz, 1986; Wasserman & Faust, 1994; Anheier, Gerhards, & Romo, 1995), it continues to remain easier to identify the issues than to resolve them.

Coase Encounters

Organizational fields as markets present a number of interesting areas for theoretical development in strategy, organization theory, and economic sociology. While much of the power of economic theory comes from its conceptualization of the environment as a market, non-economic theory-based models of strategy have yet to explicitly develop a similar framework for the environment, and have thus overlooked a set of potentially important strategic mechanisms. This commentary aimed to show that developing a framework of the environment, in a fashion analogous to the way that "market mechanisms" specify the operation of the environment in neoclassical theory, has taken place in sociology along the lines of organizational fields as markets. The insight of organizational fields as markets is that the organizational field is a stratified system of relationships, and thus, allocation, consumption, distribution, and competition within the field are driven by fundamentally different factors than in an atomistic market. Unlike the market, the organizational field is not comprised of atomized relationships but of networks of actors that are connected by non-market relationships and that allocate resources by mechanisms that operate differently from the logic of transaction cost minimization or spontaneous governance. Firms follow an embedded logic of exchange and draw on resources that are not just consequences of individual organizational attributes such as technology, but of social and cultural capitals that are distributed unevenly in positions in the hierarchical structure of the field. By drawing attention to this perspective on markets, the authors in this section signal the potentially rewarding lines of inquiry that follow from a sociology of strategy.

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