

Chapter 1

Networks and Markets: Concepts for Bridging Disciplines

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For most of their respective histories, economics and sociology have shared surprisingly little common ground. In recent years, however, practitioners of the two disciplines increasingly find themselves working side by side, exploring the same topics, being challenged by similar issues, and sometimes coming to the same conclusions. The two disciplines have different reasons for coming together. While economists are moving out from the traditional disciplinary center to explore topics such as family, ethnicity, and bureaucracy, sociologists have moved into the heart of economics to uncover the institutional and organizational features of phenomena formerly understood only through a neoclassical lens.

Among several areas of overlap, one particularly promising site of disciplinary exchange is forming around two key concepts: networks and markets. Following Joel Podolny and Karen Page (1998, 59), we can define an economic network as a group of agents who pursue repeated, enduring exchange relations with one another and, at the same time, lack a legitimate organizational authority to arbitrate and resolve the disputes that may arise during the exchange. The qualification regarding authority is necessary to distinguish a network from a hierarchy. By contrast, exchange in a market is episodic and anonymous and is mediated by competitively determined prices. Most simply, then, one could say that this book is about the intersection and interaction of personalized exchange with arm's-length exchange.

Matters are not so simple, however. To begin, many sociologists would consider the Podolny-Page definition of economic networks too restrictive because, for example, it excludes agents connected only indirectly and occasionally by referral.¹ We might then substitute for the repeated-exchange definition of networks a weaker definition such as “a group of agents who know each other’s relevant characteristics or can learn them through referral.” Going still further, Mark Granovetter’s (1985) work, which has served as the guiding formulation for economic sociology, stresses that *all* economic action is embedded in networks. Likewise, economists are no longer willing to refrain from applying the concept of “market” to personalized exchange, if in fact they ever were.² Indeed, the term “market” has become so elastic and ambiguous as to prompt one sociologist (Lie 1997, 342) to write: “The market is a central category of economics. . . . It is then curious that the market receives virtually no extended discussion in most works of economic theory or history. . . . The market, it turns out, is the hollow core at the heart of economics.” One could even say that “market” has become the conceptual banner that economists carry when they move beyond the traditional subject-area boundaries of economics, and “network” has become the equivalent banner that economic sociologists carry as they move into the base of economics.³

On the one hand, this use of the concepts of “network” and “market” maintains what we feel is a healthy lack of disciplinary convergence between economics and sociology. On the other hand, such an indiscriminate approach obscures what economists and sociologists can learn from each other. We argue that by recognizing personalized exchange among many agents as a network, economists can draw upon insights from economic sociology that they will find valuable, and that by recognizing arm’s-length exchange mediated by prices as a market, sociologists can draw upon insights from economics that they will find valuable. The promise for such a mutual enrichment was the inspiration for the workshop that led to this book.

This book concentrates on the core concepts of networks and markets and is designed to allow economists to think more deeply about how networks might be useful in economic analysis and sociologists to think more deeply about how markets might be useful in sociological

analysis. At the same time, the contributions to this volume may cause practitioners from both disciplines to define and clarify the concepts that they normally take for granted. Each chapter brings a disciplinary, but innovative, use of the two key concepts to bear on a quite specific empirical phenomenon: the formation of trusting relationships in large organizations (Burt); the sizes of business groups and the internalization of transactions within them (Feenstra, Hamilton, and Huang); the formation of stable buyer-seller relationships in wholesale markets (Kirman); the recruitment of business partners in banking (Padgett); and the exchange of information among small retail businesses (Rauch). With only one exception, the discussants are sociologists if the chapter author is an economist, and vice versa; they were asked to write about how they would approach these same empirical phenomena from the standpoints of their own disciplines. The empirical focus helps to bring out not only the implications of this volume for the practice of economists and sociologists but also its implications for policy, about which Alessandra Casella writes in her concluding remarks.

In the remainder of this introduction, we first survey some recent work by economists employing the concept of networks, then argue that economists could benefit from a deeper understanding and use of the sociological approach to networks, giving examples and illustrating our argument with chapters from this volume. Next, we do the same for sociologists and markets. In the last two sections of the introduction, we review the methodological tensions between economists and sociologists that are revealed by the discussions of the various chapters and conclude that these differences maintain a healthy division of labor between the two disciplines.

The Study of Networks by Economists

Sociologists have studied the impact of business and social networks on economic life for decades.⁴ Their work has included fundamental theoretical analyses, statistical testing, and many specific case studies. In contrast, economists have come to the subject, in a self-conscious way, only in the 1990s. It is true that in prior years many applications of industrial organization and game theory could be interpreted as shedding some light on the functioning of networks, from

the study of the conditions necessary to support cooperative equilibria to the functioning of teams. What was new in the 1990s, however, was the attempt to include business and social networks in models and empirical applications that go beyond the level of individual organizations or isolated games to the level of markets, industries, or even the entire economy, at which level networks interact with general equilibrium forces of price determination and resource constraints. In other words, some economists in the 1990s began to try to integrate network and market models of the economy and to apply the integrated models in empirical analysis.

There are many examples of economists using this new, integrated mode of analysis. Avner Greif (1993) and James Rauch and Alessandra Casella (1998) have examined how transnational networks of traders can overcome informal barriers to international trade, such as a weak international legal system and lack of information regarding trading opportunities. Steven Durlauf (1993) has demonstrated that network interactions between firms in technologically related industries can generate multiple equilibria for the aggregate growth of the economy. Rachel Kranton (1996) has shown how anonymous markets and networks can form alternative means of exchange and how the growth of one may undermine the functioning of the other. In the same vein, Raja Kali (1999) recently argued that the existence of a network has a negative effect on the functioning of the anonymous market in an unreliable legal environment because it absorbs honest individuals and thereby raises the density of dishonest individuals engaged in anonymous market exchange. Gérard Weisbuch, Alan Kirman, and Dorothea Herreiner (2000) have demonstrated that the underlying network relationships help to explain the pattern of transactions in the wholesale fish market in Marseille. Robert Feenstra, Tzu-Han Yang, and Gary Hamilton (1999) have found that differences in business group networks across South Korea, Taiwan, and Japan are reflected in differences in the quality and variety of the products they export.

In the next section of this introduction, we argue that economists' work could be greatly enhanced by incorporating into their models a richer approach to networks than they have used to date. Many elements of a richer approach are present in the sociological literature. We focus on three that are well illustrated by the sociologists' chap-

ters in this volume. First, the formation of dynamic alliances and concentrations of power tend to occur at certain nodes in networks that Ronald Burt (1992) calls “structural holes.” Second, not all network ties are equivalent; they can differ in strength and meaning (Granovetter 1973). Third, if individual agents are conceived as relationally or socially constructed, networks can be “constitutive” in the sense that they shape agents’ identities and thus their preferences, as well as their action capacities or rules (White 1992; Padgett and Ansell 1993). We have ordered these three elements of a richer approach to networks by the ease with which we think economists could assimilate them.

How Economists Can Benefit from a Deeper Understanding and Greater Use of the Sociological Approach to Networks

For economists, networks can be a way to structure interactions between large numbers of agents that are not at arm’s length—that is, not mediated by competitively determined prices. An explicit accounting of network ties is a clear advance over assuming that such interaction is mediated through summary statistics (usually the mean) for the relevant agents, a very popular approach in both theoretical work (for example, Lucas 1988) and empirical work (Borjas 1992; Rauch 1993b). Indeed, a network approach gives a much clearer idea of which agents are “relevant” and why.⁵ Networks are both an alternative and a complement to game-theoretic approaches to non-arm’s-length interaction. Network relationships do not need to be specified in game-theoretic terms, but when they are, the network structure can be used to channel and simplify the game-theoretic interactions. This flexibility allows a network approach both to encompass a broader range of relationship types and to reduce or avoid the complexity of n-person game theory in applications where the latter would make analysis intractable.

In view of the fact that flexibility is a major advantage of a network approach to non-arm’s-length interaction, it is surprising that economists have typically assumed a very restrictive form of network, especially in models used empirically.⁶ In this network form, agents are divided into disjoint “groups.” These groups interact only through the market. Within each group, every agent is tied equally to every other.

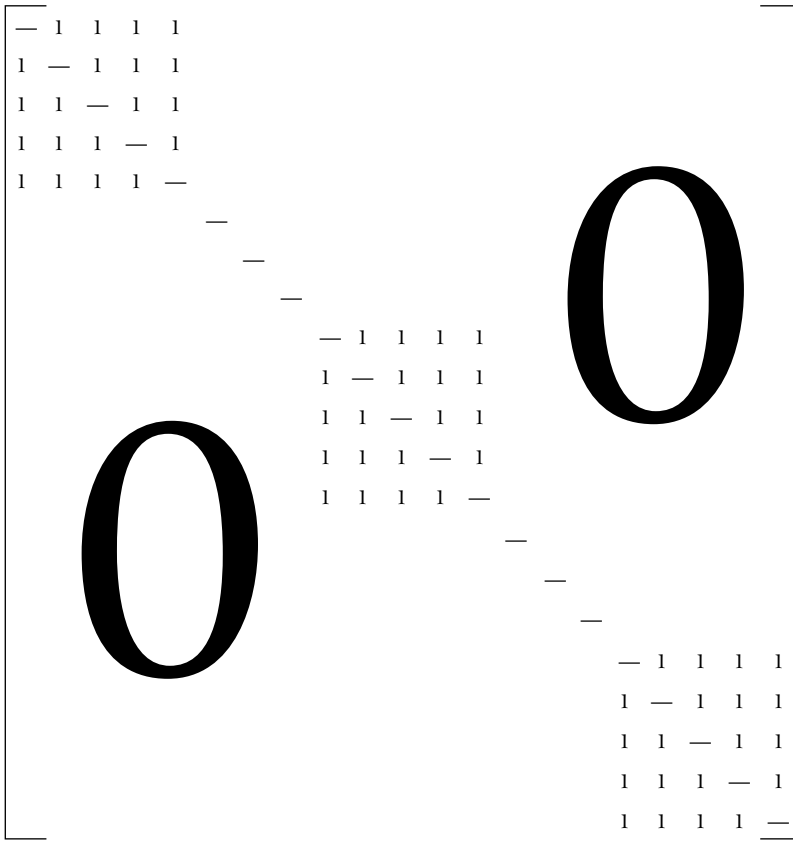
The chapters in this volume by Robert Feenstra, Gary Hamilton, and Deng-Shing Huang; Alan Kirman; and James Rauch all follow this restricted approach, though they apply it in nuanced ways with an unusual level of institutional detail. Feenstra, Hamilton, and Huang apply it to the sizes and levels of product variety and the internalization of transactions of Korean versus Taiwanese business groups; Kirman applies it to the formation of buyer-seller pairs in the Marseille fish market; and Rauch applies it to the information flows within coethnic groups of small-business owners.

We can gain greater insight into both the nature of the restrictions imposed on network structures by economists to date and the potential gains from deeper use of the sociological approach by using a standard tool from network analysis, the sociomatrix. In the figure 1.1 sociomatrix, three groups of equal size are shown. All agents under study are arrayed, in the same order, both horizontally and vertically. A 1 in the i th row and j th column indicates that agents i and j are “tied”; a 0 indicates that they are not tied. Every agent is trivially tied to himself, so we leave all diagonal entries blank. We also assume that if agent i is tied to agent j , then agent j is automatically tied to agent i , so that the sociomatrix in figure 1.1 is symmetric.⁷

Figure 1.1 is a stylized representation of the theoretical model of Feenstra, Huang, and Hamilton (1997). Each block of 1s is a business group within which firms share profits and sell to each other at marginal cost. The large 0s indicate that no other ties exist. Business groups are assumed to consist of equal numbers of firms. Profits are not shared across groups or between groups and unaffiliated firms, and in transactions outside the group, market power is exploited to its fullest, with prices marked up above marginal cost.

We wish to focus on two particular limitations of the network structure shown in figure 1.1: the absence of ties across groups and the dichotomous nature of ties. As noted already, these restrictions characterize the bulk of the work by economists who are trying to integrate network and market models of the economy, and thus figure 1.1 can be adapted to describe the various papers without relaxing these restrictions. In the model and empirical application of Greif (1989, 1993) and in the model of Rauch and Casella (1998), there exists only one group within the set of international traders, rather

Figure 1.1 Sociomatrix Showing Disjoint “Groups”



Source: Authors.

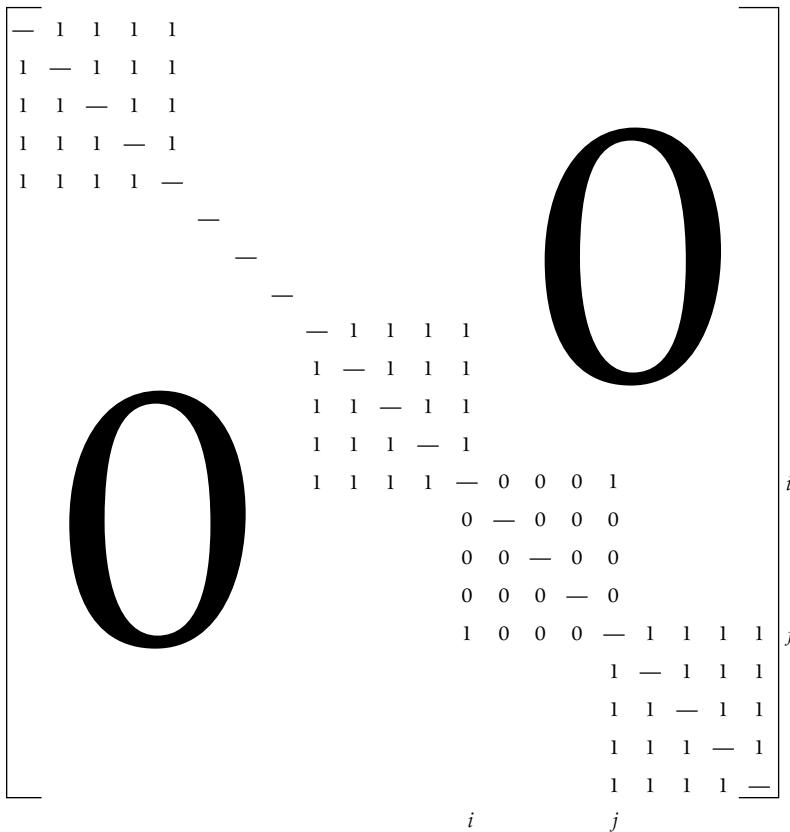
than several as in figure 1.1. The same is true for the set of all traders in the model of Kali (1999). Within the group, information is shared completely, while group members do not share information with traders outside the group (nor do unaffiliated traders share information with each other), so ties are dichotomous. In the model of Kranton (1996), every agent has one and only one partner with whom he can engage in reciprocal exchange outside the market if he chooses. In terms of figure 1.1, there are no unaffiliated agents in Kranton’s

model, and every group has two members. In the model of Weisbuch, Kirman, and Herreiner (2000), each buyer either forms a “group” with a given seller or remains unaffiliated, searching anew for a seller in every period. Network structure in their model cannot, however, be completely captured in figure 1.1 because there are many more buyers than sellers and the two types of agents cannot be described symmetrically.⁸

We consider first, and in most detail, how the restriction of the absence of ties across groups could be productively relaxed. Following Burt (1992), we can see the absent ties across the groups as “holes” in the network structure. Burt is mainly concerned with showing how agents whose ties span these structural holes, such as i and j in figure 1.2, benefit economically by acting as “brokers” between the groups.⁹ Note that agents span these holes by virtue of luck of the draw in network ties rather than by virtue of any special “human capital” that allows them to interact with different groups. Indeed, an emphasis on network position over human capital as an explanation for individual economic outcomes is a hallmark of the sociological approach to labor “markets” (see, for example, Granovetter 1988). Interesting though this explanation is, what we wish to argue here is that ties that span structural holes (“bridge ties”) can be a useful device for explaining not only individual economic outcomes but also economic phenomena at a higher level of aggregation—that is, the kind of phenomena that economists began to use networks to explain in the 1990s.

We make our case by example. Let us think of the three groups in figure 1.1 as three firms or joint ventures of firms that are making three different products. Let us also assume that for technological reasons only one product will become the “standard” in the long run. In this sense, the situation depicted in figure 1.1 is an “unstable equilibrium.” An economist analyzing this situation would typically assume that one of the three groups will be the sole survivor when a “stable equilibrium” emerges. The economist would then try to predict the survivor on the basis of a combination of initial conditions, or “history,” and expectations.¹⁰ The economist might look at a number of initial conditions, such as whether one group has some kind of head start (for example, in marketing), but he or she would not normally

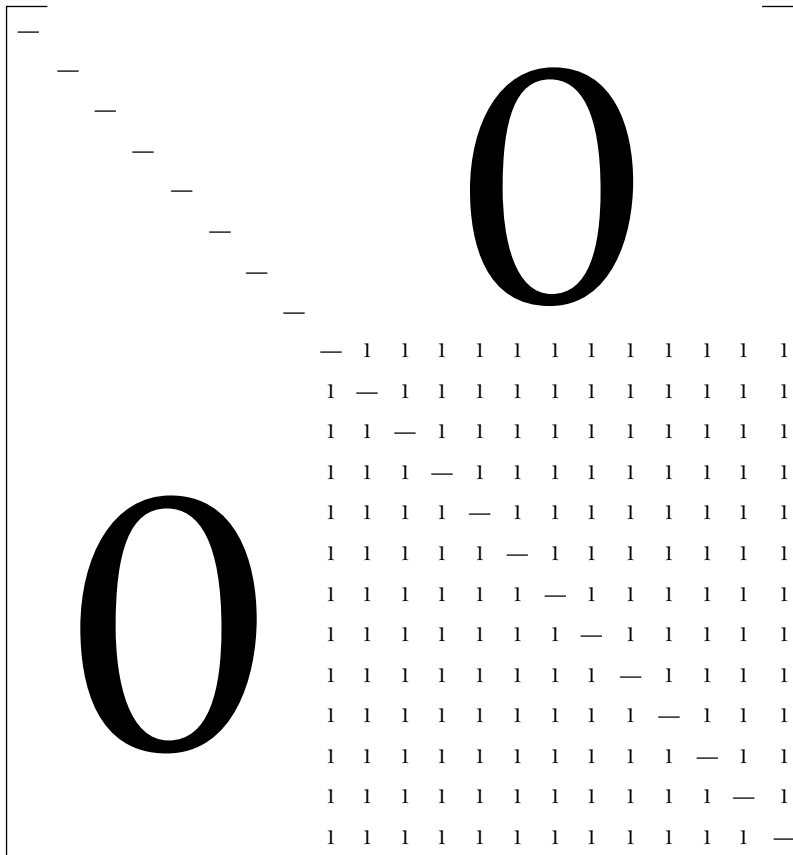
Figure 1.2 Relationship Between i and j Spans a "Structural Hole"



Source: Authors.

include the structure of network ties in the set of initial conditions to be examined. If a careful tally of network ties were to yield figure 1.2, however, one might predict that the two groups tied by the relationship spanning a structural hole would discover synergy between their products and form an alliance to make a new product that combines the best characteristics of the two old ones. The resources of the alliance and the superiority of the new product would lead to its becoming the standard. Figure 1.3 depicts the stable equilibrium

Figure 1.3 Agglomeration in a Stable Equilibrium



Source: Authors.

outcome. Note that the surviving group in figure 1.3 is larger than the sum of the two allied groups, representing agglomeration effects that attracted previously unaffiliated agents.

Our example is intended to make two points. First, the pattern of network ties can influence the outcomes of path-dependent processes of interest to economists, especially if the pattern contains ties that span holes in the network structure. Second, the pattern of network

ties may suggest outcomes that economists would not otherwise have considered—in this case, the formation of an alliance between groups rather than the survival of one of the original three. Although our example is completely artificial, Mark Granovetter and Patrick McGuire (1998) have shown how the structure of preexisting ties among principal actors in the nascent electric power industry influenced the path-dependent choice of central over distributed power generation.

We now consider how the restriction that ties are dichotomous could be relaxed. Rather than assuming that agents are either tied or not (either 0 or 1 in the sociomatrix), ties could vary in “strength,” as in the classic article by Granovetter (1973). Strength can be measured by frequency of interaction (Granovetter 1974/1995) or by emotional intensity (Marsden and Campbell 1984). Granovetter’s (1973) division of ties into “weak” and “strong” could prove especially useful to economists. For example, he shows (1974/1995) that weak rather than strong ties are the most valuable type of contact in the context of job searches. In his survey of professional, technical, and managerial employees, the modal means of finding a job was to get information from someone with whom one had once worked and whom one now saw “occasionally” or even “rarely” (less than once a year). This counterintuitive finding can be explained by the tendency for strong-tie networks (for example, kinship groups) to contain redundant rather than new information, because everyone knows everyone else. Another example of the importance of weak ties is given by the current work of Wai-Keung Chung and Gary Hamilton (1999) on the means by which Chinese entrepreneurs in Hong Kong have expanded their businesses. They find that contacts made in voluntary associations, such as those based on native place (the location of one’s lineage roots) in China’s hinterland, have more importance in economic activity than impersonal market means or strong ties, such as extended family relationships. In job searches and among ethnic traders, economists attempting to apply dichotomous-tie network models could easily focus on strong ties to the exclusion of weak ties, thereby obtaining misleading results because the latter could be valuable bridge ties.

The chapter by Ronald Burt shows how skillful application of the concepts of structural holes and weak-versus-strong ties can help us

understand agents' abilities to form trusting relationships with new acquaintances and thereby take advantage of potential business opportunities. In line with the preceding analysis, Burt first observes that a potentially valuable tie that spans a structural hole is more likely to start out weak than strong. (For example, the relationship is with someone in a complementary line of business whom one happens to meet, as opposed to a good friend who happens to be in a complementary line of business.) If the relationship in question is embedded in an agent's strong ties, his natural inclination to distrust the new acquaintance is amplified by their gossip because to be polite they go along with his inclination. If, on the other hand, the new acquaintance is relatively unknown to the agent's trusted colleagues, he must gather information independently and thus forms a more accurate judgment. Burt's hypothesis is supported by three different surveys of managers, all of which show that weak relations embedded in a manager's strong third-party ties are much more likely to be cited for distrust than weak relations not so embedded.

Burt's chapter highlights aspects of sociologists' approach to networks, especially the importance of structural holes, that we believe could be relatively easily assimilated by economists working in the neoclassical tradition. In contrast, the chapter by John Padgett highlights aspects of sociologists' approach that are less assimilable, in particular the "constitutive" view that social networks shape agents' identities and rules of action. In this view, agents activate and identify their economic interests through membership in a business or social network, and thus their interests are not independent of the "cognitive frame" that the network establishes.¹¹

The constitutive view of networks conflicts with the bedrock neoclassical assumption that the preferences of individual agents are stable and exogenous.¹² Yet the idea that social interactions can alter individual preferences is making gradual inroads among economists, as work by Matthew Rabin (1993) and Uzi Segal and Joel Sobel (1999) demonstrates. These papers suggest the possibility that many elements of the constitutive view of networks could be made acceptable to economists by models that depict agents as engaged in "social learning."

In chapter 5, Padgett argues that, in fourteenth- and fifteenth-century Florence, political developments acted as a selection mech-

anism for deciding *which* social networks would constitute agents' identities: those of family, guild, social class, or court patronage. These identities in turn determined which relationships and strategies agents would use for recruitment into Florentine banking partnerships: father-son lineage in the family regime, master-apprentice in the guild regime, intermarriage and elite friendship in the social class regime, or court connections in the patronage regime. We might think of Padgett's analysis as telling us which relationships would have counted as "1"s in a sociomatrix relevant for this recruitment. Padgett goes on to argue that these different regimes determined different stylized paths of individual bank growth and division and of interbank financial relationships.

The Study of Markets by Sociologists

Sociologists have never been reluctant to study markets and economies more generally. Karl Marx and Max Weber, both recognized today as founders of contemporary sociology, devoted much of their scholarly lives to the examination of capitalist market economies.¹³ Following this legacy, sociologists through most of the twentieth century developed a very broad but also very non-economic view of markets and economies. This view concentrated on the transformations of societies from traditional (feudal, mechanical, *gemeinschaft*) to modern (capitalistic, industrial, organic, *gesellschaft*).¹⁴ Although the development of a capitalist market economy is at the heart of this view, very few sociologists tried to understand the transformation in economic terms. Until recently, few scholars matched the rigor of even Marx's and Weber's understandings of how markets work.

Since the mid-1980s, this situation has changed considerably. Sociologists began to use two new and closely related approaches to analyze the working of modern economies. The first approach stemmed from Mark Granovetter's (1985) influential article "Economic Action and Social Structure: The Problem of Embeddedness," in which he emphasizes the importance of social relationships in establishing economic organization. Expanding from this base to establish an economic sociology, other researchers (Swedberg 1991; Granovetter and Swedberg 1992; Friedland and Robertson 1990; Zukin and DiMaggio

1990) further argued that complex economic networks do not arise exclusively from technological or economic factors but also have social and institutional foundations that structure ownership, control, and exchange relationships in the economy.¹⁵

The second approach arose as a reaction to a number of publications in related fields, especially Chandler (1977, 1990), Piore and Sabel (1984), and Harvey (1990). Sociologists critiqued and then quickly reinterpreted the conclusions of these studies (for example, Fligstein 1985, 1990; Gereffi and Korzeniewicz 1994; Perrow 1981, 1990; Stinchcombe 1990; White 1981, 1992). These researchers also emphasize networks, as well as the spatial components of economic organization, but here networks do not necessarily imply socially defined relationships. Instead, networks connote a web of ties that arise out of the processes of work and economic calculation of long-term gain. Brian Uzzi (1996, 693) makes this point very clear when he concludes, based on an empirical study of the apparel industry in New York City, that network “embeddedness is a logic of exchange that shapes motives and expectations and promotes coordinated adaptation.”

Although this rapidly growing literature addresses many issues at the heart of economics, work directly on markets is only a small part of it (Lie 1997). To be sure, market dynamics are implied in much of this literature, but core market processes—such as price, competition, and equilibrium—are rarely discussed. Aside from a few very notable exceptions (for example, White 1981, 1992; Podolny 1993), research on specific markets stresses network and interaction (Abolafia 1997; Abolafia and Biggart 1991; Baker 1984, 1990; Swedberg 1994; Mizruchi and Stearns 1994), as well as politics and regulation (Fligstein 1996; Fligstein and Mara-Drita 1996). Most sociologists would conclude, as do Neil Fligstein and Iona Mara-Drita (1996, 25), that “markets are social constructions that reflect the unique interactions of their firms and nations.” As valuable as such insights may be, the sociological literature obscures the fundamental economic features of markets—the exchange of goods and services and the setting of prices in complex and increasingly global organizational settings characterized by cooperation and competition. What are the effects of institutions on market processes? An equally important question is: What constraints do these processes place on the social constructibility of

markets? In the next section, we work in parallel with our procedure in the last section and begin with aspects of economists' work on market processes that we believe are more compatible with current approaches in economic sociology.

How Sociologists Can Benefit from a Deeper Understanding and Greater Use of Economists' Approach to Markets

For sociologists, markets represent a structure of organized interdependence between economic actors (Swedberg 1994; White 1988; Podolny 1993). Markets are constituted through the nature of the interdependence. Exogenous social networks may provide a foundation of trust on which to build economic exchanges (Granovetter 1985). Equally, interdependence may arise endogenously through repeated exchanges leading to reputations and reciprocity as organizing features of competitive markets (Uzzi 1996). Harrison White (1981, 1992) and Joel Podolny (1993) also find that repeated competition in price-based product markets leads to the formation of status-based hierarchies among producers, an outcome that has direct effects on product prices. Finding structure to be a significant aspect of market actions, most sociologists are content simply to conclude that market structure shapes market outcomes. The economists' chapters in this volume can add substance, but also complexity, to the sociologists' conclusions.

In chapter 6, Rauch addresses the market for retail products in ethnic neighborhoods. Whereas sociologists (for example, Bonacich 1973) have analyzed this situation in terms of middleman minorities, Rauch looks at the economic mechanisms that help or hinder the process of matching final consumers with supplies of the products they want to buy. In many neighborhoods, members of ethnic minorities have an advantage in linking producers of goods with final consumers owing to the trust that can be established between pairs of buyers and sellers. However, in Rauch's particular case—the African American neighborhoods of New York City—he finds that African American retailers do not establish extensive business networks similar to those of other ethnic groups, such as the Korean minority, and therefore have considerable difficulty establishing a

market-sensitive trading system. It would appear that, as we saw in the discussion of the work of Granovetter (1974/1995) earlier, furnishing information is a particular strength of weak-tie networks. The low density of business associations in the African American community makes it difficult to create weak-tie networks.

Rauch takes his analysis one step further. Observation of how the market attempts to mimic networks can help us better understand how networks themselves operate.¹⁶ The large-scale, commercial intermediaries studied by Rauch attempt to link their retailer clients to a very broad array of vendors despite the potential problem of dilution of expertise, suggesting that one advantage of weak-tie over strong-tie networks in this area is simply their ability to grow large. The fees charged by these market institutions can at least give us a lower-bound estimate of what weak-tie networks are worth to their members. At the same time, the fact that such institutions have not displaced networks provides insight into what is unique about the latter. Rauch suggests that what is special about ethnic weak-tie networks is their ability to provide a shared cultural framework for understanding.

Alan Kirman's survey of the Marseille fish market—a classic setting where all buyers and all sellers meet daily to clear the market of all goods—provides a cautionary study for both economists and sociologists. Kirman notes that loyalty is a strong feature of buyer behavior in the fish market: many buyers return to the same seller, day after day, rather than shop around for better prices. Kirman's finding is exactly what sociologists would predict: transactions are embedded in social relationships in which loyalty is generated by reinforcement learning—buyers stay with sellers with whom their past experience has been good. This learning undoubtedly involves some mutual adaptation on the part of the buyers and sellers. Loyalty becomes profitable to both buyers and sellers when, for example, sellers learn to give priority in service to loyal buyers (but to charge them higher prices than shoppers), and buyers learn that they are more likely to be served by loyal sellers (even though they pay higher prices).¹⁷ The results would seem to confirm that embeddedness pays.

Kirman's study also confirms, however, economists' prediction that, in the aggregate and despite the absence of individual maximizing behaviors, the fish market acts like a perfectly competitive

market: the market clears every day, prices of each variety of fish are stable over time, and the aggregate demand is downward-sloping. As Kirman notes in his chapter and Alessandra Casella also observes in her discussion of it, this finding “breaks the link” between individual- and aggregate-level behavior. The economic characteristics of the Marseille fish market cannot be adduced from individual behavior, but rather can be explained only by understanding how the fish market functions as an organized system. Prices are consequences of the dynamics of the system, not decisions made by individuals. The implication of this conclusion is a blow to rational-choice theories in that there is no demonstrable progression from microlevel processes to macrolevel outcomes. This conclusion also implies that embedded social networks can be delinked from macrolevel outcomes in that the same price structure may be consistent with different network arrangements.

Kirman’s conclusions emphasize the importance of a Walrasian framework as a way to break out of the theoretical preoccupation with individual-level phenomena. In much of the theoretical work in which economic and sociological theories are set in opposition to each other—for instance, the Granovetter-Williamson debate—writers focus on the micro level and debate the nature of human nature. They ask whether individuals are rational maximizers or whether it makes sense to assume they are. The normal proclivity is to state the primitive case and then generalize the conclusion, inducing complex economic organization of firms, of sectors, and even of whole economies from relatively simple propositions. Sociologists, no less than economists, make this leap of faith.

Feenstra, Hamilton, and Huang’s chapter, like the closely related paper of Hamilton and Feenstra (1998), also emphasizes the importance of the Walrasian framework. Feenstra and Hamilton argue that “bottom-up” descriptions of economic organization are misleading, if not incorrect, accounts of what happens at the level of entire economies. Bottom-up descriptions have a pernicious effect on economic analysis because they ignore the fact that, at any one point in time, an economy is a going concern, a complex, interdependent organization of industries and firms engaged in joint economic activity. Conceptualized in this way, economies consist of interconnected

markets that are linked together by, among other things, price structures (the prices of inputs and outputs as well as the price of money for financing) and capital accounting systems (the systematization of financial information about firms).

In economics, the way to model cross-market economic systems is through the Walrasian framework known as a general equilibrium theory. The formal theory of general equilibrium proposed by Kenneth Arrow and Gerard Debreu (1954) is highly mathematical, very restrictive in terms of its assumptions, and of interest to few, if any, sociologists.¹⁸ For instance, in the Arrow-Debreu version, the idealized Walrasian world contains two internally undifferentiated classes of agents, labelled producers and consumers, each of whom plans on the “right” prices but none of whom possesses the agency to alter price systems independent of their joint actions.

The Walrasian framework, however, can be opened up by incorporating a more organizational and institutional view of cross-market economic systems. Feenstra, Hamilton, and Huang’s chapter represents an initial step toward reformulating a Walrasian framework. The economic focus of their chapter is a simulation model of how business groups are incorporated in an organized economy. The stylized model depicts an organized economy consisting of upstream sectors producing intermediate inputs and downstream sectors using those inputs to produce final consumer goods. In the model, manufacturing firms decide whether to buy intermediate products at marginal markups from a firm within a group or at full markups from independent firms. Solving the model based on the pricing decisions of firms in general equilibrium reveals multiple equilibria in the form of two distinct and economically stable (that is, stable in an ideal world only) solutions to business group integration in an organized economy: a high- and a low-concentration organized set of firms. Multiple equilibria suggest that, even in an ideal world of pure economics, there is no single efficient solution, and hence that, in the real world, theorists should expect to find multiple forms of capitalistic economic organizations, the origins of which economic theory cannot explain. Treating the multiple equilibria solutions as ideal types, Feenstra, Hamilton, and Huang demonstrate the plausibility of these solutions with industrial survey data from South Korea and Taiwan.

For sociologists, one of the significant aspects of this study is its focus on how price systems influence the economic performance of different kinds of socially embedded networks. Although economic networks may be socially embedded, they are not immune to fluctuations in price structures and capital accounting systems, as the recent Asian business crisis shows so clearly. Models drawn from general equilibrium theory can serve as simulation models—computerized ideal types—that indicate which types of networks may be maintainable under which market conditions. As in Weberian theory, one of the tasks for economic sociology is to specify how economically active networks deviate in the real world from the ideal types.

The Discussions

The discussions of the various chapters reveal many interesting methodological tensions between economists and sociologists. Indeed, the discussion of Padgett's chapter by Gregory Besharov and Avner Greif is a miniature treatise on differences in method between economists and sociologists, written from economists' point of view. In a book on networks and markets, it is especially worth noting methodological differences in the treatment of these two concepts.

Let us consider networks first. Economists typically prefer to treat networks as outcomes (endogenous), as in the chapters by Feenstra, Hamilton, and Huang and by Kirman, though they occasionally treat network membership as exogenous, especially when determined by ethnicity or similar demographic attributes (see, for example, Greif 1993; Rauch, this volume). Sociologists, on the other hand, prefer to treat networks as givens (exogenous). This methodological difference is brought out especially clearly by Joel Sobel's discussion of Burt's chapter. Sobel asks why agents do not choose more open networks if agents with such networks do better than agents with dense networks. Burt's answer would be that agents largely accept the networks that they are dealt as a by-product of their other activities. Sobel's question is akin to a sociologist suggesting that when conflicting preferences create a problem (for example, the "battle of the sexes" game), the solution is for the agents to harmonize their preferences.

Turning to markets, economists typically believe that market competition plays a strong role in shaping institutions, especially within the private sector, and that it operates in a manner analogous to Darwinian natural selection. This belief leads economists to describe the various existing institutions, and even their individual features, as efficient solutions to some problem. In other words, when economists try to explain the features of an institution, they ask: What problem do these features solve? The well-known book by Paul Milgrom and John Roberts (1992) is one of the leading examples of this approach. Contemporary sociologists deride this view as crude “functionalism.” They believe that institutional structures are much more constrained by history and much more strongly influenced by political and cultural forces than do economists. This debate is joined from the sociologists’ side by Neil Fligstein in his discussion of the chapter by Feenstra, Hamilton, and Huang, and from the economists’ side by Besharov and Greif in their discussion of the chapter by Padgett.¹⁹

These differences between economists and sociologists as to whether networks should be treated as endogenous or exogenous and regarding the strength of market competition as a force for selection of institutional forms are not unrelated. An extreme economists’ position would be that market competition causes “efficient” networks to form and eliminates “inefficient” ones. Although he does not take this position, Rauch does (implicitly) argue in his chapter that efficient networks (or commercial institutional substitutes) can be constructed if government provides incentives lacking in the market; Marta Tienda and Rebeca Rajjman, in their discussion of Rauch’s chapter, are much more skeptical.

Conclusions

Sociologists and economists studying networks and markets are now crossing the disciplinary divide and working with and scrutinizing each other’s concepts. Economists have always known, of course, that personal relations are important in economic life, but they are now starting to use network conceptions of personal relations as a way to qualify their understanding of markets. Likewise, sociologists

have always known that price and profit-led markets are important in capitalist societies, but now the new economic sociologists are trying to show not only the sociological underpinning of markets but the ways in which price and profit-led markets interact with social organization. These cross-disciplinary incursions are leading to frequent exchanges between the two disciplines and to a mutual recognition that each discipline has something to learn from the other. The chapters in this book reveal that despite their disciplinary differences, economists and sociologists share common ground on a surprisingly large number of issues.

Nevertheless, we do not believe that these more intensive exchanges will lead to a disciplinary convergence of economics and sociology. It seems more likely that such exchanges will provide a clearer recognition that a division of labor exists between economics and economic sociology of a kind similar to that envisioned by Joseph Schumpeter and Max Weber nearly a century ago (Swedberg 1998; Hamilton 1996).²⁰ The details of this division of labor are still forming, but the starting points are already fairly clear and roughly correspond to the market and network approaches described earlier.

The disciplinary core of economics has been, and will continue to be, markets. Markets and the possibility of markets, as captured in rational calculations of all types, permeate modern societies as never before, and so economists will never run out of subject matter to scrutinize. As new generations of economists enter the scene, however, the focus of economic work is likely to change, perhaps leaving the rigid assumptions of neoclassical economics for less constricting perspectives.

Economic sociology is a relatively new field whose agenda is still being formulated. The current direction of research is to examine the organization of economic life, the structure of markets, and the institutional environment in which economic activities occur. Networks are one of the primary ways by which institutional and market structures are conceptualized. As the division of labor between the two disciplines matures, economic sociologists are likely to become specialists in how economies are institutionally framed and internally structured, and economists will continue as specialists in how economies perform in both the ideal and real worlds.

We would like to thank Joel Sobel and two anonymous reviewers for helpful comments. Rauch gratefully acknowledges support from National Science Foundation grant SBR-9709237, and Hamilton gratefully acknowledges support from the Center for Advanced Study in Behavioral and Social Sciences.

Notes

1. The study of Australian Chinese by Constance Lever-Tracy, David Ip, and Noel Tracy (1996, 137–38) leads them to state: “The power and flexibility of the Chinese system of networking lies in the way it can indefinitely extend the range of these personal contacts,” and they quote one Australian Chinese: “When you know one person you know others. My contacts have their contacts. You can’t know everyone yourself.”
2. Alfred Marshall (1920, 182) wrote: “Everyone buys, and nearly everyone sells . . . in a ‘general’ market. . . . But nearly everyone has also some ‘particular’ markets; that is, some people or groups of people with whom he is in somewhat close touch: mutual knowledge and trust lead him to approach them . . . in preference to strangers.”
3. Economic sociology is a very recently proclaimed subfield of sociology. As an identifiable field of study, economic sociology dates back to the works of Max Weber and Joseph Schumpeter (Swedberg 1998). Throughout much of the twentieth century, however, interest in this area was sporadic, and it languished until the mid-1980s, when a group of sociologists began to concentrate on demonstrating the sociological underpinning of economically identified phenomena. With the organizing efforts of a core group of specialists and a highly successful drive for members, the American Sociological Association formally accepted economic sociology as a fully recognized subfield only in 1999. See Smelser and Swedberg (1994) and Granovetter and Swedberg (1992) for programmatic statements and substantive discussions of the field.
4. For some reviews of the literature, see Powell and Smith-Doerr (1994) and Nohria and Eccles (1992).
5. Timothy Conley and Christopher Udry (2000) provide an especially nice empirical illustration of this advantage.
6. Purely theoretical work has increasingly moved away from this restrictive form. Examples include Jackson and Wolinsky (1996) and Kranton and Minehart (in press).

7. Symmetry itself is a restriction, but not one we consider relaxing. A good example of a sociomatrix that need not be symmetric is a matrix in which the entries are 1s when agent i states that agent j is his friend.
8. The restriction in figure 1.1 that groups are of equal size is not essential to the work discussed in this paragraph. In chapter 3, Feenstra, Hamilton, and Huang note that business groups vary widely in size within both Korea and Taiwan. In chapter 6, Rauch points out that groups of small-business owners are formed on the basis of ethnicity and may differ in size in part because population sizes differ across ethnic identities. Another restriction in figure 1.1 is that the position of each agent within a group is symmetrical. When economists relax this restriction, they mainly do so by assigning a coordinating or leadership role to one agent in the group; this agent is sometimes called a “club entrepreneur.” Land developers (for example, of industrial parks) are concrete examples of club entrepreneurs (see Henderson 1985 and Rauch 1993a).
9. Edward Glaeser, Bruce Sacerdote, and José Scheinkman (1996) allow for uniform overlap between groups as a way for groups to interact outside of the market. In their model, all agents are arrayed along a line and every agent interacts directly only with his left and right neighbors. (This network structure is also used, as a special case, by Blume 1993 and by Durlauf 1993.) A sociomatrix showing the network structure of this model would start by showing all agents affiliated with a group of size two, and then add a 1 immediately to the right of the second agent and immediately to the left of the first agent in every group. This uniform departure from the restriction of absence of ties across groups is quite different in spirit from the analysis of “structural holes” in that ties that span structural holes are valuable precisely because they are not found everywhere.
10. For a succinct illustration of how history and expectations can both play roles in determining the outcomes of path-dependent processes, see Krugman (1991).
11. Perhaps the most sophisticated version of the constitutive view of networks is found in the work of Harrison White (1988, 1992).
12. Gary Becker (1976, 5) states: “The combined assumptions of maximizing behavior, market equilibrium, and stable preferences, used relentlessly and unflinchingly, form the heart of the economic approach as I see it.”
13. Both Marx and Weber considered themselves economists more than sociologists. Weber was a trained economist and held a chair in economics, not sociology. Marx lived before sociology became an academic discipline. Though self-trained, he was a rigorous economic observer.

14. For a summary of this literature, see Hamilton (1994).
15. From this beginning, a number of researchers began to show that some of the most successful industries and economies are organized specifically to take advantage of institutionalized networks of firms (Nohria and Eccles 1992; Smelser and Swedberg 1994, part 2). Some have even argued that specific industries (Powell and Prantley 1992; Uzzi 1996) and specific economies (Gerlach 1992; Fligstein 1996; Whitley 1992; Hollingsworth and Boyer 1997; Stark 1996; Stark and Bruszt 1997; Orrù, Biggart, and Hamilton 1997) are founded on institutionalized social networks.
16. An important strand of recent research in economics is the evolution of market institutions (for example, North 1981; Milgrom, North, and Weingast 1990), which are often conceived as providing benefits that substitute for participation in social networks.
17. Economists (for example, Dixit 1992) have recently devoted considerable attention to examining how the combination of the irreversibility of many investment decisions with uncertainty can generate another explanation for loyalty, which they prefer to call “hysteresis” or “lock-in.” If accepting what appears to be a better deal requires making an investment for which an agent has little alternative use, he may prefer to stick with what he has and knows rather than risk forfeiting his investment if the deal goes sour. Investments that are relationship-specific are especially unlikely to have good alternative uses, so hysteresis naturally arises in the context of networks.
18. It is missing even a theory of the firms.
19. This debate parallels one within evolutionary biology itself (Gould and Lewontin 1979).
20. Both Weber and Schumpeter believed, but in rather different ways, that an adequate study of economic life could be achieved only by dividing the analytic work between economic theory, economic history, and economic sociology. Each subject area has a different theoretical and substantive focus, but combined they give the full view of the place of the economy in human life.

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