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The motivational foundation of social networks[☆]

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Abstract

The origins of motivations for network behavior are found in modern theories of early childhood development. There are two types of early motivations: safety on the one hand and efficacy on the other. Safety corresponds to and is generated by networks of cohesion, while efficacy comes about from separation and corresponds to networks with structural holes and is typical of brokerage situations. Both cohesion and brokerage are necessarily involved in any network situation as a matter of fundamental theoretical necessity, but they occur under different circumstances in individual and organizational action. Studies are reviewed that show that effective relations both within and between organizations require both cohesive bases and brokerage between otherwise not well connected units. © 2002 Elsevier Science B.V. All rights reserved.

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1. Introduction

Social network theories can be applied to many different levels of analytic interest—from individuals to groups to organizations to entire societies. A network structure can be described in the same terms whether it is a structure of friendships between people or a structure of trading relations between nations. Because of this, network theorists are wary of degrading their approach by introducing ideas that might apply to one level and not to another and so open themselves to charges of “reductionism.” The concept of motivation is one such term that is more easily applied to individual people than to organizations. Some theorists have maintained that network structure engenders the motivations of the participants in the structure. Networks with many structural holes (the absence of ties within networks) produce entrepreneurial or competitive motivations, whereas those with cohesive or dense ties produce cooperative motives and may engender a sense of community among network members. Nevertheless, a quest for the sources of network motivation leads to an

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important discovery that has profound implications for network theory at all levels. There are two, not one, basic motivations for relations that are grounded in very early childhood development: the quest for support and comfort, and the quest for efficacy and mastery. These motivations will be shown to map directly onto network cohesion (the presence of many interrelated ties) and structural holes, respectively. Both are necessary for effective functioning not only at the individual level, but at all levels of analysis. Thus, “motivation” has network analogues or components not only for individuals, but also for organizations. The argument between proponents of cohesion and structural hole approaches to network analysis is a false argument.

Using a well known example of activity or personal agency in a network, this paper introduces the concept of a network “broker.” The famous “small world” experiment is shown to be another example of brokerage. Structural hole management and manipulation is presented as a formal theory of agency. But community and cohesion are also claimed to be important in agency as well as diffusion. These theories, I will suggest, echo Simmel and Durkheim. Turning to theories of motivation, we suggest a psychological rather than a biological theory of basic drives as expounded by psychoanalyst Greenberg, and show that the same drives towards safety on the one hand and efficacy on the other are also invoked as fundamental motives by contemporary academic psychologists Rodin and Haidt. These drives are shown to have particular network structures that satisfy them. Safety drives associated with dense cohesive structures are more likely when costs of interaction are low, when visibility is high, and when moral obligations are more salient. Effectiveness drives are more salient in market situations characterized by structural holes. There are also macro socio-cultural situations that emphasize one or another of these motives. Nonetheless, both motives are present to some degree in all networks. Some implications for organizational theory are suggested.

2. Brokerage, community and agency

An influential early work in the field of social networks, *Friends of Friends* (Boissevain, 1974) begins with an account of how a Sicilian academic solved a problem regarding the education of his eldest son, who possibly was being blocked by one of the professor’s enemies from graduating high school, thereby foreclosing the son’s university education. An elaborate network of relatives and friends was mobilized, first to verify that there indeed was a problem, and second to insure that the son was indeed admitted to the university. At one point, “one of them” (a *Mafioso*) was thought to be part of the helping network. Although Boissevain observes that most of us do not use such elaborate or extreme means, “all of us have problems which we at least attempt to resolve via friends and friends of friends with whom, we may even form temporary alliances My discussion, thus, concentrates on the way in which interpersonal relations are structured and influenced, on the way individuals seen as social entrepreneurs seek to manipulate these to attain goals and solve problems, and in the organization and dynamism of the coalitions they construct to achieve these ends.” (Boissevain, 1974, p. 3).

This relatively early work in the network field sees networks as structured by a given social system, but also emphasizes that by utilizing the elements available in the social structure,

individuals further construct and develop networks to meet their needs. The “system” does not automatically rule. Boissevain devotes attention to individuals who become “highly expert network specialists” (p. 148) or brokers. “A broker is a professional manipulator of people and information who brings about communication for profit.” (p. 148). In his famous “small world” experiment, Milgram (1967) asked subjects to find brokers who would lead them to a particular targeted person. The median length of the chains linking the starting point to the target (the wife of a student living in Cambridge) was five, but the length varied from 1 to 11 intermediaries. Of 160 chains that were started in Nebraska, only 42 were completed.¹ People, thus, vary in their motivation to play the broker role, as well as in the skills required to perform efficiently. More recently, Burt (1992) has advanced a theory of network entrepreneurs or brokers who reap the benefits of linking nodes which would not otherwise be connected. Rather than call attention to the existence of connections, Burt focuses on “structural holes” defined as “the separation between non-redundant contacts,” meaning that without the broker these nodes would not be connected. In a current review of the benefits of broker role as the network analogue of “social capital,” Burt shows that persons active in “building relations between dissimilar people,” gain many valuable resources such as early promotion in organizations because they “know about, have a hand in, and exercise control over, more rewarding opportunities” (Burt, 2000).

There is also a tradition in network theory of interest in “community” (Craven and Wellman, 1973; Wellman et al., 1988), “social support” (Cohen and Syme, 1985), “social circles” (Simmel, 1922; Kadushin, 1966), and diffusion (Coleman et al., 1966; Valente, 1995) that examines the presence of ties embedded in a social system; cohesion, dense relations and contagion are emphasized rather than holes or the absence of ties. Despite or perhaps because of the seeming disconnectedness of modern society, cohesion, support, and diffusion have strong effects on people; ties and connections are found in communities that need not have geographic proximity (Wellman, 1999). In this literature, what Burt (2000) calls “closure” seems more important than agency. Some of the literature tests cohesion-based models in comparison with structural similarity or brokerage-based models. A now classic re-analysis by Burt (1987) of a medical innovation dataset originally reported by Coleman et al. (1966), concluded that cohesion was less tied to early adoption than was structural equivalence based on holes. Others are not so sure that Burt was correct (Borgatti and Everett, 1992; Valente, 1995) and attribute his findings to possible artifacts of measurement. The issue is muddled and more complex than it seems because diffusion/contagion models may involve transmission through direct contact of embedded others, through indirect contact with opinion leaders or brokers (Katz and Lazarsfeld, 1955), and through emulation, intentionally or otherwise, of either similar or prestigious others (Powell and DiMaggio, 1991) or all or some of the above.

The present paper will argue that both cohesion and brokerage are necessarily involved in any network situation as a matter of fundamental theoretical necessity. Cohesion becomes even more important in modern society than in traditional systems because community and propinquity usually must be created actively rather than being natural givens. This argument was stated in somewhat different form by Durkheim in his *Division of Labor*

¹ The original article reported 44 completed chains, but a somewhat modified version published in (Milgram, 1969, pp. 103–120), reports 42 completed chains. I assume the revised version has the correct figure.

(Durkheim, 1902). Density and cohesion are identified, in his counter-intuitive formulation, with the “mechanical solidarity” of traditional societies, while “organic solidarity,” a situation replete with holes, requires, as he points out in his famous Preface to the Second Edition, additional effort to create cohesive situations. Simmel’s cross-cutting circles (Simmel, 1922) can be viewed as an argument that individuals in a metropolis create their own mix of communities whose sole point of contact may be the focal individual. Creating community in modern societies requires talents more conventionally associated with brokerage and structural holes since communities are created through the agency of talented individuals making connections across hitherto unconnected nodes. On the other hand, the “structurally autonomous” broker who manipulates structural holes depends in part on her own base of support, a situation conventionally associated with cohesion. In order better to understand the fundamental duality of cohesion and brokerage, we need to review basic theories of motivation within networks. Motivations are “hard wired” into the original human network of infant and her mother and father or other household members, or what Homans (1950) called “The Human Group.” Their later association with different network structures replicates this original constellation.

There are basically two kinds of human drives that cluster two types of motives or feelings: the first is the drive towards safety which clusters the motives and feelings of dependency, trust and support; and the second is the drive towards effectiveness which clusters the motives and feelings of mastery, competition and envy. Strikingly, these two clusters are associated with the two most fundamental characteristics of social networks: density or cohesion on the one hand and structural holes or competition or brokerage on the other. Networks are created as a consequence of both safety and effectiveness drives; neither alone will suffice. Motivation will first be discussed in terms of individuals, but will then be generalized to social units such as organizations.

3. Basic psychological theory

Most sociological theorists include some account of the psychology of motivation as a preliminary to an analysis of social structure. Often these are called theories of action (Parsons, 1937; Coleman, 1990) because they attempt to account for the actions of individuals. The psychological theories invoked range from rational choice (Coleman, 1990) and other theories that assume goal-directed behavior to those that assume expressive behavior not necessarily teleologically directed. Parsons, e.g. switches from goal-directed accounts of action in *The Structure of Social Action* (Parsons, 1937) to “dynamically” oriented accounts based on classical Freudian theory in *Toward a General Theory of Action* (Parsons and Shills, 1951). Giddens is more current in his interests in psychological theory. Wrestling with the degree to which actors are conscious of their motives he observes, “unconscious motivation is a significant feature of human conduct, although I shall later indicate some reservations about Freud’s interpretation of the unconscious.” (Giddens, 1984, p. 6). For in Giddens’ scheme, “motives tend to have a direct purchase on action only in relatively unusual circumstances, situations which in some way break with the routine.” (p. 6). Indeed, Giddens has an extended discussion of the merits of Freud’s famous theory of “slips of the tongue” and also incorporates some of Erikson’s theories, though again not without a critique.

Most sociological theorists who invoke a motivational model often do so either at a fairly superficial level or utilize formulations that may seem old-fashioned to contemporary psychological theorists. The present attempt will utilize contemporary theoretical strands in psychology: relational psychoanalytic theory as expounded by Greenberg (1991) and eclectic academic psychological theory as synthesized by Haidt and Rodin (1999). The former deals with safety and effectiveness, the latter mainly with effectiveness, although it argues that individual effectiveness also requires systemic support or feelings of safety.

4. Safety and affiliation

In general, modern object relations and self-psychology theory have assumed that the seeking out of others is a primary human activity, since others are necessary to satisfy basic human needs. The mother as the initial target or object of the infant is frequently noted. Thus, network activity is the natural, necessary and original human condition. But the problem for Greenberg is not that seeking out others is a fundamental human motivation, but *why* seeking out others is fundamental—what do people *want* from others, and what are the needs that others satisfy? For example, “in my view, Fairbairn’s drive theory is based on a rather simple notion of what the child wants: it is a one drive model based on self-preservative needs manifested in the child’s (and later in the adult’s) dependency.” (Greenberg, 1991, p. 73).

But dependency, while a lifelong condition, is surely not all there is to life, since with dependency, agency all but disappears. Greenberg concludes, as did Freud, that there are two basic motives, although Greenberg’s motives are psychological rather than biological drives. These two basic drives are the safety drive and the effectiveness drive.

Safety is fundamental because “. . . [P]eople will not risk either new kinds of behavior nor new kinds of experience unless they feel safe enough to do so [T]he importance of feelings of safety is one of the strongest findings that has emerged from a century of psychoanalytic investigation.” (Greenberg, 1991, pp. 132–133). Further, safety is an affiliative drive. “The workings of the safety drive invariably move people closer to their objects.” (Greenberg, 1991, p. 133). “. . . [T]he safety drive . . . is inherently and from the beginning directed at a human object.” (Greenberg, 1991, p. 134). “. . . [B]ecause it aims at feelings of physical, intellectual, and psychological relaxation, the safety drive moves us closer to other people.” (Greenberg, 1991, p. 137).

4.1. Effectiveness and structural holes

In contrast, efficacy “drives the child’s urgent, exuberant activity . . . what Hendrick (p. 40) has succinctly called the need *to do and to learn how to do*.” (Hendrick, 1942). “. . . [E]ffectance is characterized by a sense of self-sufficiency, autonomy and individuation.” Greenberg (1991, p. 137). Effective needs pull one away from other people. “Culture (read, society), as a broad reverberation of human needs for relatedness, is indispensable because it serves our need for safety, for being embedded in a secure structure (Fromm, 1941). But it is stifling because it can thwart effectance strivings, which often push against the norms of social living.” (p. 139). The drive for effectance is as innate as the drive for safety. “It is a sensation that begins in the body, probably in the muscles, and is initially experienced

as pleasure in movement for movement's sake alone. Soon after, it expands to include the early sense of agency that Stern (1985) believes the infant feels when he first experiences volitional acts, such as deliberate movement. Later in the course of development, it is extended outward, becoming inextricably involved with feelings of competence and mastery over the environment." (p. 136). This is an urge for independence from others, particularly one's mother. "The effectance drive is, therefore, a construct well suited to account for what are, unquestionably, aversive elements inherent in all object relations. Freud used aggression (and even the death instinct) to explain wishes to move away from the object." (p. 137). This theory, however, presupposes neither a primary drive to destructiveness nor a reaction to the object's necessary failures.

Similarly, Haidt and Rodin (1999) describe motivational aspects of control: "... [E]ffectance is an *intrinsic* motivation of striving for competence or mastery. The satisfaction of effectance leads to a pleasurable feeling of efficacy." (italics supplied, p. 329). Effectance may be divided into a need for competence and a need for autonomy, though the latter "may be a particularly Western need." (p. 329). That is, whether or not effectance strivings overcome a "stifling" environment may depend on the culture. There is a universal social condition for effectiveness, however, that Haidt and Rodin (1999) called "systemic supportiveness." "A supportive system is a system that provides the affordances that an individual needs to take on and master new challenges." (p. 332). While there are many aspects to supportive systems, a key underlying assumption is safety, in Greenberg's terms, a feeling that stems from satisfactory primary relationships.

5. Safety and social networks

In network terms, safety or supportive systems are usually equivalent to density in networks, which has been generally associated with "social support," "cohesion," and "embeddedness." Dense social networks are characterized by the sense of "trust." That is, it is assumed that if you act in a certain way towards the other, the other will in turn satisfy your needs. Note that the relationship takes place in time. The self moves towards the other, and then the other reacts. In the language of economics, this is a discounted situation. In the perfect case of trust, there is no discount at all. What self gives is what self gets back in return, often because the time lapse is negligible. In the simplest case, in a dyadic relationship, it is assumed, e.g. that if you give the bus driver the money for a fare, he will accept that money and not throw you off the bus.

In general, trust takes place in a situation of relatively high density and visibility, and over a short time span. This situation is frequently described as one of "cohesion" and "social support." Of course, these can be varied. There is a large literature on exchange situations in which the visibility of the network and/or its shape as well as the discounted value of the exchange to the dyad is experimentally altered so that, among other things, the extent of cohesion and support are also altered (see Molm et al., 2000 and references cited). In addition, experimenters can alter the balance of "power" in the exchange so that one or both sides of a transaction are less motivated to trust one another.

In more complex situations, there can be an elaborate chain of interactions in a network and there may be a certain degree of discounting; that is, because there is a time delay,

self expects to get a bit more in return than self originally put down. Perhaps, the most interesting form of trust occurs when the trust is placed not in the partner to a dyadic transaction, but in the system as a whole and when there is a significant time delay. This occurs when it is apparent to nodes that they will get a return not necessarily from their direct partner, but from some other node(s) in the system at a later date. Both the “Kula Ring” (Malinowski, 1922) and the American Western Frontier “barn raising” are examples. These in turn demonstrate “net generalized exchange,” Claude Levi-Straus’s term explicated so convincingly by Ekeh (1974). This “cast thy bread upon the waters” principle is dependent in turn on the “discount rate” of future returns, the visibility of the system, the tightness of the system network structure, the cost of present support efforts, and one’s place in the system hierarchy—those in higher places have more investment in the system, and hence, demonstrate “noblesse oblige.” (for details, see Kadushin, 1981; Uehara, 1990). To be sure, as Greenberg points out, and as is evident in Durkheim’s “mechanical solidarity,” density and cohesion exact the price of conformity and can be stifling.

Finally, as we shall see when we discuss effectiveness, trust and safety is very much a matter of insiders versus outsiders. Relationships with insiders are more dense, and more supportive and trusting, while relationships with outsiders are less dense, and therefore, open to the manipulation afforded by “structural holes.”

5.1. *Effectiveness and social networks*

We can turn the concept of density in social networks on its head, as it were, and look to the holes in the network, the lack of connectedness, rather than to cohesion. This is associated with the work of Burt in (among other works) his influential *Structural Holes: The Social Structure of Competition* (Burt, 1992). By focusing on the holes rather than the connections, attention is drawn to efficacy rather than to safety. In competitive situations, other people’s cohesion is a disadvantage. Persons embedded in a dense cohesive network all have the same information, each is constrained by the other, but at the same time one cannot be played off against the other. Thus, no one can gain an advantage. On the other hand, if a person is a bridge between more dense parts of a network not connected with one another, and thus, characterized by structural holes, the person gains information from diverse clusters that do not have direct access to one another; one node can be played against the other. “Players with relationships free of structural holes at their own end and rich in structural holes at the other end are structurally autonomous. These players are best positioned for the information and control benefits that a network can provide.” (p. 45). Support at the player’s end and a lack of density at the other end make the player effective. Note the very language has changed from self and actor to “player,” best described as an entrepreneur who gains advantage by mediating between others and “making an offer that can’t be refused” because the other has no alternatives. Motivation, according to Burt, is created by the network: “. . . [T]he network is its own explanation of motive. As the volume of structural holes in a player’s network increases—regardless of the process that created them—the entrepreneurial behavior of making and negotiating relations between others becomes a way of life If all you know is entrepreneurial relationships, the motivation question is a non-issue.” (p. 36). This is an extreme structural position that denies the

independent contribution of other factors, especially the content of network flow. As to the content of the motivation, Burt quotes Schumpeter (1934) in describing the entrepreneurial motivation as “. . . [T]he will to conquer; the impulse to fight, to prove oneself superior to others, to succeed for the sake . . . of the success itself . . .” (p. 35)—in short, to be effective.

As described by Greenberg, the motives in this situation are quite different from the ones associated with safety. The effective person does not want to be close to everyone, but only to some; other persons are pushed away or ignored. The effective person is not necessarily “nice.” She seeks control and profit rather than affiliation and equal exchange. Competition is a network aspect of effectiveness.² Not everyone can win. Network theory further suggests that one competes with or tries to beat or at least keep up with those who are structurally isomorphic. Persons are structurally isomorphic if they have the same pattern of relations with other nodes (Borgatti and Everett, 1992). Note that they do not have to be in connection with one another. It is easiest to see this structural pattern with culturally named role relations. Within a given kinship system, all “fathers” are structurally isomorphic. Their network with the other members of their families is basically the same. In formal organizations, all managers at a certain level with a given number of reports can be said to be structurally isomorphic. Competition can be even more direct in situations of structural equivalence, in which persons have the same pattern of relations to the *same actual* individuals rather than merely to the same *type* of individuals as with structural isomorphism. While Borgatti and Everett (1992) claim that these two forms of structural similarity are often confused (pp. 17–24), either form of structural similarity generates a competitive situation; the drive for effectiveness becomes a motive: “keeping up with the Joneses.”

5.2. *Both safety and effectiveness*

Since both safety-affiliation-trust-density and effectiveness-competition-structural holes situations are both inherent human motivations and present in all social networks when does the one or the other become more salient? “Keeping up with the (equivalent) Joneses” as a consequence of efficacy motives is an attribute of situations with many structural holes rather than situations of high cohesion. These motivations are necessary when the costs are high, when the visibility is low, when the discount rate on future returns is high and when one may not be in moral command—in short, in situations in which the modern market is

² Greenberg interprets conflict between a boy and his father not in terms of classic Oedipal theories, but rather in terms of balancing safety and effectiveness in a network that includes the mother. Suppose, e.g. that the boy wins a tennis match with his father. “The boy is attached to his father by needs of various kinds (i.e. needs for all the feelings of security that come from being a father’s son) as well as by virtue of his love, loyalty and concern At the same time . . . the boy is ambitious and wants to be competent, he is competitive and wants to win, he resents the years of subordination to the father and wants revenge . . . [but] the mother’s role colors all that has happened Winning attaches him to his mother . . . or winning is a submission—in the act of winning, the boy feels that he loses his autonomy by serving his mother’s purpose.” (depending on how the mother feels about the father) (pp. 16–17). Note the complexity in Greenberg’s formulation. The father–son–mother triangle contains both competition and support. In competing with the father the son makes himself structurally similar to the father. The outcome of this competition eventually depends on the relation the two have to the mother. But regardless of whether support or efficacy is primary, the other is always present and so the outcome is necessarily conflictual (I assume the pun “*serv*ing his mother’s purpose” is unconscious on Greenberg’s part).

predominant. In such situations, actors attempt at least to keep up with, and at best surpass, others with whom they are structurally similar. Note that in the formulation just given, the actors can be organizations, nation-states or other kinds of collective actors.

To be sure, in all competitive situations, the effective actor taking advantage of structural holes has to form alliances with the part of the network that is “on her side,” as it were, so that trust of some limited kind is always present. Borgatti and Everett (1992) observe that most empirical studies use measures of structural equivalence to measure structural isomorphism. That is, techniques which measure the extent to which actors have similar relations to the *same* actors are used to invoke theories that speak of actors having similar roles. For example, organizations are analyzed in terms of whether actors have structural equivalence to the same actual persons; the discussion then centers around similarity, say, between “managers” where manager is defined as a role. Most of these studies “work” in the sense that they produce plausible findings precisely because measures of structural equivalence also have a density or cohesion component. The familiar and easily visually depicted CONCOR algorithm, e.g. tries to group actors in terms of the extent to which they have similar relations with others. Take the familiar core/periphery structure that CONCOR depicts so well. Whereas peripheral blocks typically relate to the same others, but not to one another (Groucho Marx’s aphorism that he would not want to be a member of any club that would have him as a member), the central and the most likely powerful members of an organization are more likely to relate both to the same other persons in other blocks and also to one another. Not only are they able to take advantage of gaps in the connections within the less powerful periphery, but they are also mutually related to other powerful central actors. Thus, they have a potentially mutually supportive structure. Manipulation of others without some trust somewhere in the social system is less likely to be successful. Managers, now defined as a role, are generally likely to support one another in terms of their relations with subordinates.

The main difference between effectiveness networks and safety networks as ideal types is the location of trust. In safety networks trust tends to be an attribute of the entire network, not just of the “player’s” side. In effectiveness networks trust is present only to a limited degree between the player and the other who is the object of play. Further, since total visibility in effectiveness networks can be low, one of the startling if not even magical findings of network research is that actors need not be consciously aware of these structurally similar others to behave as if they were trying to keep up with them. It is not necessary for them to be directly aware of one another for them to be motivated by effectiveness. Nevertheless, as far as both Greenberg from the psychoanalytic perspective and Haidt and Rodin from academic psychology are concerned, effectiveness and control are basic human motivational needs or drives, yet effectiveness is dependent on *prior* conditions of safety and systemic support. As Greenberg points out, “the safety and effectance drive operate continuously and *both* pulls are *always* present, although one or another is likely to dominate conscious experience at any particular moment.” (p. 138, italics in original). To be autonomous, which is an early, deep-seated drive, one must also feel safe and supported. If you will, this is the ultimate paradox of human existence.

Given that safety and efficacy are both deep-seated drives tied to early experiences, it seems plausible that there might be personality attributes tied to these drives. Burt et al. (1998) correlate items from a personality instrument developed by Management Research

Group (MRG) with ego networks of MBA students using Burt's measure of constraint for ego networks. The more constrained networks are those with fewer relations, high density, and reliance on a few strong contacts. These are the ones that are less likely to have structural holes. Burt et al. found 10 MRG item clusters to be related to constraint and simplified them into 10 dichotomous choices (Burt et al., 1998, p. 77). These items indeed correlated -0.74 with Burt's network structural measure of constraint. Thus, a personality type favorable to structural holes, or being a "network entrepreneur" or what we have called effectiveness is negatively related to a network situation in which is constrained because there are few structural holes. Close scrutiny of the items suggests a mixed story. Some of the items such as "when evaluating opportunities, I am likely to look . . . (A) for a chance to be in a position of authority (indicative of effectiveness), (B) for the long run implications" clearly suggest aggressiveness or leadership. Another example is "in a discussion among peers, I am probably seen as . . . (A) an outspoken advocate (indicative of effectiveness), (B) motivating people to my views." Other items, however, suggest a supportive drive: "in an emergency, I . . . (A) take the safe approach, (B) am quite willing to help (indicative of effectiveness)"; or "as a member of a project team, I . . . (A) seek the advice of colleagues (indicative of effectiveness), (B) closely follow the original mandate of the group." Just as measures of structural equivalence inevitably include density (Borgatti and Everett, 1992), so too does a personality correlated with network entrepreneurship include aspects which suggest support of others. An effective network manipulator needs also to take others into account. I do not doubt that aggressive entrepreneurial personality is related to the formation of networks with more structural holes. But this personality also must have some underpinning of trust or feelings of safety to be effective. There are cultural aspects to personalities based on safety and effectance, however, which I will comment upon in the following sections.

5.3. *Motivations and practical networks*

To summarize on the matter of network agency: what are cohesion on the one hand and structural holes on the other "good for"? Cohesion, as the vast literature on social support³ shows is good for "support"—for access to needed resources, emotional or otherwise. So the motivation for support is satisfying basic needs or sustaining the status quo. Structural holes are not for satisfying present needs, but for creating change and movement. The more autonomous node, in the sense that it is in contact with other nodes not densely related to one another, plays one node against the other and reaps the advantage. On the other hand, this manipulator lacks the immediate and effortless access to resources enjoyed by those embedded in total cohesive networks. Although the broker must rely on at least some trusted partners, trust cannot be the sole motivator because it is not present throughout the network, only in parts of it. Note how difficult it is to gain trust in a bargaining situation in which the players have limited contacts with the "other side," but relatively dense contacts with those on "their side." On the other hand, the support literature by and large shows that support is

³ A search for "social support" recently produced over 43,000 items indexed on the "Northern Light" search engine that includes its special collections in sociology—564 items, health psychology—187 items, and mental health—2704 items. Recent reviews include: House et al. (1988), Coyne and Downey (1991) and Cohen and Herbert (1996).

rendered when the costs are low or the chance of direct reciprocity is very high (or there are special kinship norms), which is typical of situations in which safety is the motivator.

In real social life as opposed to social theory, it need not be an either/or situation. Podolny and Baron (1997) suggest that in corporate settings in which we are concerned with individual executive mobility, situations with structural holes make it easier to assimilate diverse sources and play people off against one another, but there is clearer social identity with smaller, more cohesive networks. When people compete for jobs, having a coherent, well defined organizational identity, and therefore, clear and consistent role expectations is as important as having access to information and resources. There is a paradox: network structures most conducive to information and resources and brokerage are not conducive to clear social identity and vice versa. There are, therefore, two kinds of effective mentors who help persons advance through organizations: one is described as a source of social resources and information and is characterized by not being tied to the close networks that surround a particular candidate. This mentor, who classically is able to take advantage of structural holes, is tied to varied and less mutually connected social structures which, because of their lack of tight connections in the world of the mentee, do not support a consistent organizational identity for him or her. This very spread is what makes these mentors so valuable to the more constricted mentee who does not have such a scope. The other kind of mentor is embedded in a more dense support network shared by the mentee that allows for buy-in and consistent identities. Candidates have to straddle both worlds.

What is true for individuals is also true for organizations. Talmud and Mesch (1997) show how both safety-support through embeddedness and effectiveness-brokerage through structural holes are important in predicting corporate stability in Israel. Uzzi (1996), in analyzing New York City's garment industry, shows that "some firms transact using principally arm's-length ties; other firms, in keeping with embeddedness, appear to form tangible networks of production linked by embedded ties." (p. 690). "... [E]mbeddedness is a logic of exchange that shapes motives and expectations and promoted coordinated adaptation . . . actors do not selfishly pursue immediate gains, but concentrate on cultivating long-term cooperative relationships These actions and motives are themselves not assumed to be due to the hard-wired orientation of economic actors or conformity to abstract norms, but to the emergent properties of concrete network relationships." (p. 693). "Embeddedness, however, yields positive returns only up to a threshold point. Once the threshold is crossed, returns from embeddedness become negative Optimal networks are not composed of either all embedded ties or all arm's-length ties, but integrate the two." (p. 694). In a study of lending patterns between banks and small businesses, Uzzi amplifies and extends this point.

In economic sociology, there are two general theories for understanding how social relations and networks create economic and social benefits. The weak-tie approach argues that a large, non-redundant network of arm's-length ties is most advantageous; the strong-tie approach argues that a closed, tightly knit network of embedded ties is most advantageous (Sandfleur and Laumann, 1998). How can these opposing approaches to tie quality (weak versus strong) and network structure ("holey" versus dense) be reconciled? My analysis of arm's-length ties supports the weak tie thesis, demonstrating that weak ties are superior at "shopping" the market for publicly available information. Similarly, my

analysis of embedded ties supports the strong-tie approach by showing that embedded ties are superior at “plugging” actors into the unique collective resources of dense network clusters. Thus I suggest that embedded ties and arm’s-length ties are complementary rather than cannibalistic when they are combined within the same network, because one type of ties helps overcome the limitations of the other type while enlarging information and governance benefits (Uzzi, 1999).

I would add that in general both safety (embedded “dense” ties) and effectiveness (arm’s-length “holey” ties) are necessarily found to some degree in all networks because people are always motivated to act in terms of both safety and effectiveness. Further, Burt, whom we noted as a champion of the advantages of non-redundant contacts, has recently suggested that closure or cohesiveness *within* one’s group coupled with structural holes in contacts beyond one’s group provides for the maximum performance of a group (Burt, 2000). This is essentially the point we have been making.

As further evidence for the advantages of both safety and effectiveness, consider what people do when they are in a position of choice.⁴ It is assumed that persons of higher rank or social class have more choices. In work-based networks, the higher one’s rank the more numerous one’s strong *and* weak ties in the work context. Erickson observes that weak-tie network diversity grows steadily from employees to supervisors to managers to owners (Erickson, 1996), but there is the same progression in the proportion of people who say they feel close to people at work (shown in an unpublished report). In general, persons of higher social class have more diverse social networks as well as cohesive ones, whereas persons lower in social class have more geographically local cohesive networks (Kadushin and Jones, 1992), but fewer weak-tie diverse networks that convey a competitive advantage.

“The more the more”—a proposition that is generally true for survey-based data—may be begging the question, however. To the point is, what is the optimal balance between safety and effectiveness for different structures and for different situations? For individuals who are attempting to navigate their way within groups and organizations, and for organizations seeking to survive and prosper in mixed economies, there is usually a delicate balance between safety and effectiveness, or between density and structural holes.

The two dimensions that we have been discussing—safety/density/support and effectiveness/structural holes—can vary simultaneously such that one can have relative amounts of one and the other. At one extreme, there is the “buccaneer” who is low on support, but high on effectance, and at the other extreme there is the “conservative” who is high on support, but low on effectance. The question of balance can be translated into asking what the contextual effects are. A person or collectivity high on density, but low on structural holes might be effective in one context, but not in another. The example with which we began, the Sicilian academic whose foiled ambitions for his son were resolved by mobilizing an elaborate skein of friends and relatives, lived in a society fundamentally high on density that valued mutual support. Arguably, his hole-bridging efforts were successful precisely because the normal state of that system tended more towards traditional society and the support pole rather than towards the relatively rare entrepreneurial buccaneer, who when invoked, however, could be quite powerful.

⁴ This point was suggested by Bonnie Erickson, personal communication.

Some cultures emphasize one pole or the other. Markus and Kitayama (1998) have engaged in a series of studies that suggest that in European and American cultural contexts, “a person is an autonomous entity defined by a somewhat distinctive set of attributes, qualities, or processes.” In contrast, “the interdependent model of the person gives priority to social structural and interpersonal frameworks such as families, work, work groups, social roles, positions, or relationships defining the person.” Asian cultures tend to elaborate this interdependent model of personality. The interdependent model is more consistent with density and support whereas the autonomous model is more consistent with structural holes and effectance. By and large, we can assume that persons and collectivities that are congruent with the dominant culture/personality mode will be more valued. Going “outside the box,” however, as we have seen, can be dramatically effective if there is also a cultural prescription that allows for such relatively unusual behavior. Paradoxically, should the same Sicilian academic have tried similar tactics to get his son into Harvard, there might have been serious negative reactions.

6. Conclusion and summary

The following general conjectures have been advanced.

1. Because they are rooted in universal early human network experiences, safety and effectance drives are deep-seated and always present. Safety motivations are mainly associated with dense cohesive networks, effectance motivations mainly with networks containing structural holes, but both motivations are always present in all networks.
2. Macro socio-cultural systems tend differentially to emphasize safety over effectance or vice versa.
3. Effectance motivations associated with structural holes (networks that are based on structural similarity) are more likely to be salient when costs of interaction are high, when visibility is low, when the discount rate on future returns is high, and when noblesse oblige or moral command is low—that is, in competitive market situations. The converse is true of safety motivations and networks based on cohesive direct connections in which support and access to needed resources rather than competition are paramount.
4. An important difference between safety networks and effectiveness networks is the location of trust: in safety networks trust is an attribute of the entire network; in effectiveness networks trust is more likely on the player’s side.
 - 4.1. Nonetheless, some degree of trust is present across structural holes, because without it, brokers—actors who take advantage of structural holes—are less likely to be successful. Effective network manipulators need to take the other into account.
 - 4.2. Because visibility in effectiveness networks is relatively low, actors need not be consciously aware of structurally similar others to emulate their behaviors. In safety networks, actors tend more consciously to model themselves on others with whom they share cohesive relationships.

This is just the beginning of the story; much more needs to be said. The details that specify some of the conditions under which one or another of these drives and network types is

more likely to be salient, given that both are present, are described in a further paper on social circles and inter-organizational relations and are matters for further research.

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