

The Emergence of Hospital Federations: An Integration of Perspectives from Organizational Theory

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In the now turbulent field of health care, the nation's hospitals are building a variety of multiorganizational arrangements (Fottler, Schermerhorn, Wong, and Money 1982; Provan 1984). One important form of multiorganizational collaboration is the hospital alliance or federation.

Federations consist of three or more organizations that pool resources to achieve stated objectives. A distinctive feature of federations is that a management group or organization coordinates and, to some extent, directs their activities (Provan 1983). Federations appear to hold important advantages for their members. Unlike mergers and many joint ventures, for example, federations involve no change in the corporate ownership of firms. As a result, federations are easier both to enter and to exit. This may be one reason that at least one dozen multistate hospital federations, including over 1,400 members, have emerged since the late 1970s (American Hospital Association 1986). Indeed, approximately 25

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percent of the nation's hospitals are members of federations, and the number appears to be growing steadily. Moreover, because a member of a hospital federation has a significant share of most major markets for health care, the behavior of hospital federations can have a substantial impact on the health care industry in the United States.

An example of a prominent hospital federation is the Voluntary Hospitals of America (VHA), formed by 30 hospitals in 1977. Today, VHA has 600 members spanning 40 states, with 160,000 hospital beds. The member hospitals are geographically dispersed and retain their status as independent firms, but they work together to achieve economies of scale (e.g., purchasing supplies), to develop new services (e.g., health maintenance organizations), and to provide management services (e.g., management information systems).

Hospital federations such as VHA should be examined for several reasons. First, given the growth of federations, knowledge of their behavior is becoming increasingly important, not only for hospital administrators but also for managers of organizations that interact with hospitals. Second, hospital federations may increase the concentration of health care resources, raising questions for policy makers about the effects of federations on the cost and quality of health care and on access to health care. Finally, hospital federations are of interest to researchers and theorists concerned with such organizational adaptation to environmental change as is now occurring in health care, banking, transportation, and communications. Hospital federations exemplify organizational strategies that involve cooperation rather than competition (Herriott 1986).

Previous research on organizational federations has drawn heavily from a single conceptual perspective in organization theory—the resource exchange and dependence perspective (D'Aunno and Zuckerman 1987; Pfeffer and Leong 1977; Pfeffer and Salancik 1978; Provan 1982; 1983; 1984; Provan, Beyer, and Kruytbosch 1980). This work has examined factors that facilitate the emergence of federations and factors that influence the autonomy of organizations in federations.

Though previous work on federations is useful, it has rarely adopted conceptual perspectives other than a resource dependence perspective. Yet, in our view, a resource dependence perspective offers only a partial explanation for the emergence of hospital federations. Thus, the primary purpose of this article is to stimulate research on, and to advance understanding of, the emergence of hospital federations by examining them from multiple conceptual perspectives. Specifically, we will develop hypotheses from a resource dependence perspective (Pfeffer and Salancik 1978), a transaction cost perspective (Williamson 1975; 1981); an institutional perspective (Meyer and Rowan 1977; DiMaggio and Powell 1983),

and a population ecology perspective (Aldrich 1979; Hannan and Freeman 1977; 1984; McKelvey 1982; McKelvey and Aldrich 1983). Our objective is to draw from major perspectives on organization-environment relations to advance a set of hypotheses concerning why hospitals form federations.

A second purpose is to show how current perspectives on organization-environment relations may be usefully integrated in the study of a complex phenomenon such as the emergence of organizational federations. Though each perspective provides a unique viewpoint, only when the perspectives are integrated is their potential for contributing to knowledge of organizational federations fully realized.

DEFINING AND DISTINGUISHING ORGANIZATIONAL FEDERATIONS

D'Aunno and Zuckerman (1987) and Provan (1984) have defined organizational federations and distinguished them from other kinds of multiorganizational arrangement. Federations consist of three or more organizations that retain their status as independent firms and, at the same time, intentionally pool resources (e.g., information, funds, personnel) to achieve stated objectives (Provan 1983; 1984). Depending on the objectives of federations, they may exist for months or years, but they are not necessarily permanent arrangements. Further, the members of federations relinquish at least some control of their activities to a management group or organization whose ostensible objective is to help members attain the goals of the federation (Provan 1983). The National Collegiate Athletic Association (NCAA) and the United Way are well-known federations.

Three features distinguish federations. First, the members of federations set criteria for membership and can exclude organizations that do not meet the criteria. The selective membership of hospital federations typically differentiates them from trade associations (e.g., American Hospital Association). Trade associations have historically encouraged the participation of all organizations in a field or industry in an effort to promote the interests of the entire industry (see, for example, Duncan 1948). Hospital federations, because of their selective membership, tend to have far fewer members.

Second, federations involve more than two organizations. They are thus different from, and more complex than, mergers and joint ventures, which link two organizations. Third, federation activities are guided by a management group, a feature that sets federations apart from other

forms of multiorganizational collaboration, such as coalitions (e.g., Gray 1985).

Of course, the power of management groups to coordinate the behavior of member organizations varies widely. The NCAA, for example, was founded in 1906, but member colleges and universities did not grant it the right to control athletic programs through rules and sanctions until 1952 (Stem 1979). Organizational participation in the United Way is voluntary and involves a quid pro quo arrangement; for its participation an agency receives from the United Way an allocation from the money raised during an annual campaign. In return, a member agency cannot solicit donations from individuals and must meet United Way budgeting requirements. However, a member organization can raise funds from other sources including foundations, sales, and local or state governments (Pfeffer and Leong 1977).

The NCAA, the United Way, and hospital federations are examples of what Provan (1983) terms *voluntary federations*. Member organizations can, in principle, choose to leave voluntary federations. In *mandated federations*, the management group controls affiliated organizations either by law or by strong external pressure, so that members are forced to participate in the federation and must pay high costs for exit. Typically, for example, a professional sports team or franchise must comply with rules issued by the league office or suffer heavy penalties.

THE EMERGENCE OF HOSPITAL FEDERATIONS: HYPOTHESES FROM MULTIPLE PERSPECTIVES

A RESOURCE DEPENDENCE PERSPECTIVE

The resource dependence perspective (Aldrich and Pfeffer 1976; Pfeffer and Salancik 1978) argues that organizations respond to the demands of groups and organizations in their environment on whom they depend for valued and scarce resources (e.g., technology, funds, personnel). The dependence perspective, however, also assumes that organizations do not passively comply with demands from their environments. Rather, it assumes that administrators attempt to manage dependencies both to ensure the acquisition of key resources and, hence, organizational survival, and to maintain their own autonomy which, in turn, allows adaptation to new contingencies. Hospitals, for example, can reduce dependence on

outpatient clinics for referrals by purchasing such clinics or founding their own clinics.

The resource dependence perspective argues that an important, if not necessary, condition for an organization to pursue a strategy such as federation building is the organization's dependence on at least one actor in its environment for valued resources (Litwak and Hylton 1962; Pfeffer and Salancik 1978; Provan 1983). Resource dependence motivates managers to seek ways to alter or lessen their dependence, particularly if the supplier of a valued resource is unreliable or makes unreasonable demands. The likelihood that hospitals will pursue such strategies as federation building increases when actors on whom they are dependent threaten to withdraw valued resources or behave in a manner that introduces uncertainty. Federal and state legislative bodies, for example, currently both create uncertainty and threaten hospital resources by contemplating and passing legislation to control the costs of health care. In response, it appears, hospital federations have formed to lobby in Washington and in state capitals. Thus, a resource dependence perspective on the emergence of hospital federations suggests the following hypotheses:

Hypothesis 1: Hospitals are more likely to pursue such strategies as federation building when they are dependent on actors for valued resources than when they are relatively independent of suppliers of resources.

Hypothesis 2: The likelihood increases that hospitals will pursue such strategies as federation building when actors on whom they are dependent threaten to withdraw valued resources or behave in a manner that introduces great uncertainty.

However, organizations can reduce or manage dependence problems in several ways, including joint ventures (Pfeffer and Nowack 1976), mergers (Pfeffer 1972a), and interlocking boards of directors (Pfeffer 1972b; 1973). Why would organizations form federations to deal with resource dependence rather than pursue some other strategy?

One answer is that, relative to other available strategies to deal with resource dependence, federations are typically less costly in terms of managerial autonomy. A second answer is that federations (as opposed to, for instance, mergers or joint ventures) enable individual firms to band together and act as one, thus increasing their power in exchanges with suppliers of valued resources. By banding together, organizations can increase their size and strength or at least create an impression of size and strength. They concentrate their resources or appear to concentrate them and in so doing can more effectively bargain for their point of view with groups in the environment.

A third answer is that federations, in comparison with loose coalitions of firms, have the advantage of a management group that can act to facilitate the development of positions on issues confronting member organizations and then to lobby for such positions. In fact, lack of management group may motivate coalitions to become federations (D'Aunno and Zuckerman 1987). Federations have fewer and less diverse members than trade associations, so it is easier to build consensus among them concerning lobbying efforts.

The foregoing arguments suggest:

Hypothesis 3: Federation building is likely to be the strategy of choice to the extent that hospitals can maintain their autonomy and yet appear to concentrate their resources.

A fourth answer is that federations unite organizations that share material interests. Hospitals that are geographically dispersed and yet are similar in terms of the services they offer or the type of community in which they are located are likely to face similar patterns of resource dependence and, as a result, have similar problems to solve. For example, a federation has been formed among 40 university hospitals from across the United States.

Hypothesis 4: The likelihood that hospitals will form federations increases to the extent that they face similar patterns of resource dependence.

Finally, the extent to which potential members relate to each other symbiotically rather than competitively (Hawley 1950; Pfeffer and Salancik 1978) may influence the emergence of hospital federations. In a symbiotic relationship, one actor uses some of another actor's resources or products. A community hospital and a university hospital may maintain a symbiotic relationship. The university hospital may welcome the community hospital's referrals for tertiary care because the university hospital needs such cases for teaching and research. On the other hand, the community hospital benefits from the expertise and status it receives from an affiliation with a university hospital. Further, the community hospital can benefit financially from referring costly tertiary care cases to the university hospital.

Of course, organizations often relate to each other both symbiotically and competitively. They may compete with each other for certain resources (e.g., patients) but not for others (e.g., technology). Nonetheless, a high degree of symbiosis among organizations facilitates the emergence of federations because each organization has an interest in the effectiveness and survival of the others.

The members of a hospital federation in Rochester, New York relate to each other both competitively and symbiotically (Block, Regenstreif, and Shute 1981; Georgopoulos, D'Aunno, and Saavedra 1987). In 1978, nine hospitals in the Rochester area formed a federation to address financial problems. Because the hospitals are located in the same geographic area they often compete with each other for referrals of patients, but they do not provide the same services (e.g., a university hospital and a county hospital for the elderly are members of the federation) and they also relate to each other symbiotically.

Symbiotic relationships among organizations help them to recognize that cooperative, federational activities can either replace or exist simultaneously with competitive activities. The NCAA and the United Way allow their members to balance competition and cooperation. The United Way eliminates competition among members for local donations but permits members to compete with each other for state or federal funds. United Way members are related symbiotically in that they often refer clients to each other for particular services. In forming federations, organizations create safety zones for themselves in which competition for certain resources is at least temporarily halted or reduced. Symbiotic exchanges among organizations promote the awareness that such safety zones can be useful and even necessary. Thus:

Hypothesis 5: Hospitals that are symbiotically linked acquire valued resources from each other, are more likely to be aware of the benefits of collaboration, and thus are more likely to form federations than hospitals that relate to each other only competitively.

However, it is important to point out that most hospital federations do not have members located in the same geographic area. This suggests that it is easier to reach cooperative agreements when hospitals do not compete with one another. When hospitals are located in the same area, the emergence of federations is facilitated to the extent that the hospitals have symbiotic ties, which can promote cooperation even among competitors, as is the case in Rochester.

TRANSACTION COSTS AND HOSPITAL FEDERATIONS

The transaction cost perspective (Coase 1937; Williamson 1975; 1981; Williamson and Ouchi 1981; Ouchi 1980) has drawn considerable attention from organizational theorists over the past few years (for critical reviews, see Pfeffer 1982; Robins 1987; Maitland, Bryson, and Van de Ven 1985). The central unit of analysis in the perspective is a transaction or

transfer of resources (e.g., goods, services, funds) between two actors. Partners in transactions are assumed to try to minimize costs associated with exchanges that are above and beyond the costs of producing the goods or services exchanged (Maitland, Bryson, and Van de Ven 1985; Robins 1987). Such costs are termed transaction costs and organizations or individuals attempting to conduct transactions typically incur various types of transaction costs (Williamson 1975; Jones and Pustay 1985). For instance, *negotiating* costs are incurred in reaching an initial agreement on the terms of exchange, often expressed in a contract, and there may be *monitoring* costs as each party attempts to ensure that the other is keeping the terms of the agreement.

Mechanisms to govern or mediate transactions are important in the transaction cost perspective. Coase (1937) argued that transactions can be governed by markets in which competition among actors increases the likelihood that the value of goods or services will be reflected in their price. In other words, markets can serve to reduce transaction costs. Coase also recognized that transactions can be efficiently regulated within firms when hierarchies are established to specify the terms of exchange among actors.

In Williamson's view (1975; 1979; 1981), markets fail to govern transactions efficiently when one of several conditions obtains: markets are not competitive (e.g., they are dominated by a few firms); actors behave opportunistically; there is uncertainty about exchanges; or there is bounded rationality or limits on actors' ability to process information (March and Simon 1958).

Williamson (1979) argues that markets are not competitive, not only because of conditions such as monopoly or oligopoly but also, because organizations develop transaction-specific investments in one another. For example, a supplier of pharmaceutical supplies may have a history of transactions with a hospital and, as a result, may develop special knowledge of the needs of the medical staff. In this case, the supplier may have an advantage over other firms, thus reducing the competitive nature of the market.

To the extent that such conditions characterize markets, it is difficult to write contracts that adequately and efficiently specify the obligations of each party. Organizations that find themselves in noncompetitive markets seek vertical integration, merger, or other means to establish hierarchies to minimize transaction costs.

It is important to point out that the transaction cost and resource dependence perspectives are not as incompatible as they might initially appear or as their proponents have sometimes claimed (Williamson and Ouchi 1981). Both perspectives are variants of exchange theory; they take

as their central unit of analysis an exchange of resources of a transaction between two or more actors. Resource dependence theorists see managers as motivated to maintain autonomy or power relative to their exchange partners. Transaction cost theorists see managers as motivated to make transactions as efficient as possible by minimizing transaction costs.

Stinchcombe (1985) has recently argued that an organization can, and often does, use contracts to establish a limited hierarchy over another firm. For example, contracts are written that grant a buyer the right to inspect carefully and, if necessary, to change the production processes of the supplier of an important product. The critical point of Stinchcombe's analysis is that we ought not draw simple dichotomies between markets and hierarchies.

Similarly, we believe that federations, in many instances, occupy a middle ground between markets and hierarchies. That is, federations are similar to hierarchies in that they establish a means to regulate transactions among organizations. Certainly, many federations do not have the authority to impose rules on members as do hierarchical organizations, but most federations do develop mechanisms to coordinate transactions among organizations, and such mechanisms have the potential to reduce the transaction costs of member organizations.

Thus, a transaction cost perspective on federations suggests that:

Hypothesis 6: Hospitals are likely to form federations to the extent that federations can mediate transactions among their members more efficiently than either markets or hierarchies.

A key question is, under what circumstances can hospital federations reduce transaction costs for their members relative to markets or hierarchies? First, of course, the potential members of a hospital federation must have some relationships that generate transaction costs; there must be costs involved in interhospital relationships. Transaction costs could arise, for example, from the transfer of patients, arrangements for medical student residencies and internships, joint use of medical technology, and overlapping medical staff membership.

Second, for a federation to emerge, the costs of cooperation must be less than the costs of competition or of maintaining the status quo in relationships (Jones and Pustay 1985). Several factors can increase the costs of cooperation and thus make it less likely that federations will form.

The costs of cooperation may increase as the number of interacting organizations increases, making it more difficult to negotiate, monitor, and enforce agreements. Similarly, when the environment of cooperating organizations is changing and uncertain, they will have to develop more complicated terms of agreement. The costs of cooperation increase as the

extent of interaction among parties increases; high levels of interaction change the balance of power and dependency, further complicating the problem of reaching agreements. In short, the likelihood that organizations will form federations increases to the extent that they develop mechanisms to reduce the transaction costs associated with cooperation.

Previous work suggests two possible means of reducing the transaction costs of cooperation. First, to the extent that the management group of a federation can bear the costs of negotiating and monitoring interorganizational agreements, organizations can shift the costs of cooperation from themselves to others and thereby make federations less costly (Jones and Pustay 1985). In fact, in the early development of several hospital federations, members of the management group have spent much of their time building consensus among organizations concerning the purposes and programs of the federation. But, of course, organizations are often reluctant to invest authority in such management bodies.

Second, the transaction costs associated with cooperation can be significantly reduced to the extent that managers share a common set of values and goals, forming a "clan." Ouchi (1980) has argued that clans contribute to efficiency because they create a perception of equity among actors. Actors more readily enter into agreements when they perceive that, at least in the long run, they will be treated equitably. In turn, the likelihood that managers of independent organizations will come to such shared understandings probably rests on several factors including their previous interaction, if any, with one another, their prior experience in federations or coalitions, the opportunities that exist for them to interact outside their respective organizations (e.g., in professional organizations) and, finally, values they may share about important issues (Stevenson, Pearce, and Porter 1985). For example, the president of a newly formed federation of Catholic hospitals asserted that the federation is more unified than most because it has "a very strong Catholic heritage and Catholic tradition" (Anderson 1987, 42).

In sum:

Hypothesis 7: Hospital federations are more likely to emerge when the transaction costs involved in cooperation are reduced for potential members by management groups or by shared values and goals.

Finally, it is important to reiterate that there are relatively few federations such as the one in Rochester in which the member hospitals are in close proximity to one another and interact with one another routinely. This does not imply that there are no transaction costs among neighboring hospitals, or that they do not seek to minimize such costs, or that federations are not themselves cost-effective. We expect that as resources in

the field of health care continue to be limited, hospital managers will put more emphasis on increasing organizational efficiency; this may include seeking to reduce interhospital transaction costs in federations.

AN INSTITUTIONAL PERSPECTIVE ON FEDERATIONS

Several theorists have developed what is termed an institutional perspective on organization-environment relations (Meyer and Rowan 1977; Zucker 1977; 1983; DiMaggio and Powell 1983; Tolbert 1985; Meyer and Scott 1983; Tolbert and Zucker 1983; Rowan 1982). This perspective focuses attention on the beliefs, norms, and rules that characterize the social context in which organizations are embedded. Normative understandings or expectations of organizations that are widely shared are termed the institutional environment.

In modern societies, organizations are typified as systems of rationally ordered rules and activities (Weber 1947). In turn, because organizations are expected to behave rationally, their policies and practices are readily accepted and institutionalized (Zucker 1977; Meyer and Rowan 1977; Meyer and Scott 1983; Tolbert 1985). The policies and practices of organizations have become widely acknowledged as appropriate means to achieve goals.

As a consequence, organizations experience pressure to conform to common understandings of effective and efficient structure and behavior. Violating such expectations may call an organization's legitimacy into question and thus affect its ability to obtain resources and societal support. Indeed, DiMaggio and Powell (1983) and Meyer and Rowan (1977) have argued that the pressure to conform to institutional norms is even greater for organizations such as hospitals whose output is difficult to measure. The institutional environment of organizations defines for them what is appropriate structure and behavior.

The institutional perspective seems to have in common with the resource dependence perspective an important point: both view legitimacy from the environment as a key for organizational effectiveness and survival. In the resource dependence perspective, legitimacy is viewed as a resource that organizations obtain and exchange for material resources such as funds and personnel (Pfeffer and Salancik 1978). From an institutional perspective, organizations gain legitimacy through isomorphism with the environment (DiMaggio and Powell 1983), i.e., by conforming to commonly accepted structures and procedures. In this view, the importance of federations lies not so much in their ability to help organizations solve technical problems (e.g., improve efficiency) but

rather in their ability to enable organizations to enhance their legitimacy (Ritti and Silver 1986).

Moreover, some theorists have emphasized the role of institutional norms and values in shaping the responses of organizations to resource dependence problems. In other words, institutional environments define for organizations a set of informal, and sometimes formal, rules by which to compete for resources.

A recent study by Tolbert (1985) nicely illustrates this point, hypothesizing that universities will create special administrative positions to manage dependence on important sources of funding *only* when such dependencies do not fit *traditional* patterns of dependency—when such dependencies are not the norm for universities. For example, public universities have long been dependent on public sources of funding such as state appropriations. For them, dependence on public funds is institutionalized, and they do not need to create additional administrative positions to manage their dependency. On the other hand, when universities develop dependencies on atypical sources of funds (e.g., a private college depends heavily on government contracts), they are likely to manage the dependency by creating additional positions. The data supported Tolbert's hypotheses and suggest that organizations' responses to resource dependence are conditioned by institutional norms.

It follows from an institutional perspective that:

Hypothesis 8: Hospitals are more likely to form federations to the extent that doing so conforms to widely held expectations and beliefs.

There are several reasons to believe that hospitals may be experiencing pressure to form federations or similar multiorganizational arrangements. First, in the field of health and human services, collaboration among organizations has long been viewed as beneficial for community and societal needs. Indeed, interorganizational collaboration is sometimes mandated by law in the field of health care, while in other industries collaboration is viewed as a violation of antitrust regulations.

Second, the members of one of the initial federations, VHA, are widely considered to be among the most prominent and respected hospitals in the nation. The behavior of respected opinion leaders sends powerful messages to others in the field.

Third, norms encouraging multihospital arrangements are likely to have been developed by hospitals that merged to form multihospital systems. Such systems differ from federations in that the members lose their status as independent firms, but the widespread emergence of hospital systems is one of the most significant trends in the industry in the past

several years (Ermann and Gabel 1984). Hospital federations may be a form of mimicry of multihospital systems (DiMaggio and Powell 1983).

Finally, there exist in the hospital industry several conduits for the diffusion of norms about federations. Managers have many opportunities for social interaction, and established social networks facilitate the diffusion of information and norms (Marrett 1980; DiMaggio and Powell 1983). Thus, managers whose organizations form federations may be both enhancing the legitimacy of their hospitals *and* creating norms for other managers in the field. Perhaps a snowball effect is being created in the hospital industry. As an increasing number of not-for-profit hospitals form federations, it may become widely accepted that federations are useful, and even necessary, vehicles to compete with for-profit hospital corporations and other not-for-profit hospitals. Managers who do not respond to changes in their environment by forming a federation or engaging in similar strategies may violate a norm that implies a multiorganizational response to the environment is necessary.

In sum:

Hypothesis 9: Institutional norms exist to support the emergence of hospital federations as a result of historical emphasis on collaboration, examples set by opinion leaders, and a desire to mimic large multihospital systems.

Finally, the institutional perspective emphasizes aspects of managerial motivation and behavior different from the other approaches considered thus far. The resource dependence and transaction cost perspectives emphasize the cognitive aspects of managerial behavior: managers are information processors and strategic decision makers who have knowledge of their organizations' transactions and respond to reduce inefficiency or dependence. In contrast, the institutional perspective, at least implicitly, presents managers as individuals who are concerned with apprehending and conforming to the norms and beliefs of other managers and groups in their environment. In this view, managers need to know and contribute to the symbols and rituals of the culture in which their organizations are embedded. Managers must manipulate impressions and the symbols of rational behavior.

THE POPULATION ECOLOGY OF FEDERATIONS

The population ecology perspective, drawing heavily from biological concepts and principles, argues that the behavior of organizations is largely determined by their environments (Hannan and Freeman 1977; 1984;

Aldrich 1979; McKelvey 1982; McKelvey and Aldrich 1983). The perspective focuses not on individual organizations but rather on organizational forms or populations of organizations. Further, the perspective is primarily concerned with the evolutionary development, including birth and death, of forms of organizations.

A key premise of the population ecology perspective is that individual organizations are subject to strong inertial forces and rarely succeed in making substantial changes in strategy and structure in response to environmental threats (Hannan and Freeman 1984). As a consequence, organizational adaptation to the environment occurs principally at the *population level*, as one form of organization replaces another. The term "organizational form," though variously defined (see Pfeffer, 1982, 181), generally refers to the structures and processes that characterize individual organizations (Ulrich and Barney 1984).

Of course, an important assumption is that individual organizations can be classified into populations based on common organizational forms (McKelvey 1982). Once population characteristics are identified, the relationship between environments and the survival and death of organizational forms can be examined. For example, Hannan and Freeman (1977) have hypothesized that generalist organizations (e.g., those that engage in a number of diverse activities) can survive over a wider range of environmental conditions than specialist organizations.

In short, from the population ecology perspective, organizations operate in environments that provide them with resources necessary for growth and survival. But resources often are limited, and organizations must compete with each other for survival. Those organizations best suited to their environments are selected for survival, while others are selected against and disappear.

From a population ecology perspective, the emergence of federations does not necessarily or typically involve changes in the core features of hospitals. Core features such as the goals, authority structure, and technologies of hospitals appear to remain the same as hospitals form federations. This is consistent with the assumption that organizations are subject to strong inertial forces, or:

Hypothesis 10: Hospitals are less likely to form federations to the extent that they are required to change their core features to do so.

Further, Hannan and Freeman (1984) have argued that, on the average, structural inertia increases with the age of an organization and perhaps with its size. Older and larger organizations have relatively more difficulty in changing core features than younger and smaller organiza-

tions. As a result, they may be less likely to join, or certainly to change themselves substantially to remain members of, federations.

The population ecology perspective, similar to the institutional perspective, also considers the possibility that federations may be part of a transformation of the population of hospitals, a transformation in which the predominant form of organization will be multihospital arrangements. Indeed, one could argue that federations are a mechanism that will work in conjunction with environmental forces to select hospitals for long-term survival. In other words, a hospital's chances for survival could be improved by membership in a federation in part because such membership may yield material benefits and legitimacy and, in part, because federations will select only effective and efficient hospitals as members. In short, federations may both help the strong get stronger and reduce threats from the environment.

Moreover, given the turbulent environment hospitals face, large generalist federations may be more likely to survive over time than either freestanding hospitals or specialist federations (see Hannan and Freeman 1977). Federations that survive will engage in a wide range of activities and programs with a large number of members, increasing access to the resources hospitals need to perform effectively in competitive environments (Alexander, Kaluzny, and Middleton 1986, Kaluzny et al. 1987).

The foregoing arguments suggest:

Hypothesis 11: Federations are more likely to emerge among relatively large, efficient, and effective hospitals.

However, we ought to recognize that population ecology makes no claims that transformations in a population of organizations guarantee the organizations' effectiveness or survival. On the contrary, Hannan and Freeman (1984, 150) argue cogently that innovation (i.e., the creation of new strategies and structures) "is random with respect to adaptive value." Stinchcombe (1965) hypothesized that organizations encounter a "liability of newness," a heightened chance for organizational death when they are first formed and have not yet been able to secure sufficient environmental support to survive competition. There is now a growing body of empirical support for this position (Carroll and Delacroix 1982; Freeman, Carroll, and Hannan 1983; Carroll 1983; Singh, House, and Tucker 1986). Similarly, organizations also may face a greater chance for death during times of significant reorganization, since such reorganizations entail mustering a new set of resources. Indeed, Hannan and Freeman assert that environmental selection tends to favor organizations whose structures are difficult to change. In their view, structural inertia is a consequence of environmental selection.

CONCLUSIONS

Organizations and their managers seem to be motivated by multiple concerns in relation to their environments, including concerns to: maintain autonomy from groups in their environment; increase efficiency in relations with other organizations; learn and conform to institutional norms; and survive in competitive circumstances despite difficulties in adapting organizational strategies and structures to changing demands.

Indeed, it is possible that several of the factors hypothesized to influence the emergence of hospital federations could be working simultaneously. For example, hospitals could be motivated to form federations not only to manage resource dependence problems but also to improve their efficiency in relations with other hospitals. In other words, in many cases, the hypotheses advanced above are not mutually exclusive.

At the same time, however, it seems that there are some instances in which certain hypotheses could be viewed as competing rather than complementary. For example, suppose that several hospitals form a federation to oppose proposed changes in state legislation concerning Medicaid payments; this behavior could be accounted for from a resource dependence perspective (see hypotheses 1 through 4). Suppose further that the federation increased transaction costs among the hospitals, thus failing to support Hypothesis 6. In this example, the hospitals' need to manage a resource dependence problem outweighs the costs incurred in cooperating.

Further, suppose that the chances for survival of a particular hospital could be improved substantially by joining a federation that would offer access to needed capital, technology, and management services, but, to join the federation, the hospital would need to change significantly its structure and operations. In this example, hypotheses from a population ecology perspective may be at odds with hypotheses from a resource dependence perspective. In our view, these two brief illustrations indicate the need for further integration of the hypotheses and conceptual perspectives introduced above (see also Ulrich and Barney 1984).

One point of integration is to recognize that the importance of resources (e.g., information, funds, personnel, legitimacy, technology) is likely to vary over time depending on an organization's stage in the organizational life cycle (Kimberly and Miles 1980). Resources such as legitimacy, for example, may be more important for effectiveness and survival in the early stages of an organization's life cycle. In fact, in a recent study of social service organizations, Singh, House, and Tucker (1986) showed that lack of institutional support is an important reason why many organizations die early in their existence.

In contrast, in the middle stages of an organization's life cycle, it may be more important to increase the efficient use of resources, as suggested by the transaction cost perspective (Quinn and Cameron 1983). Similarly, the ability of hospitals to change their core features to form or join federations is likely to vary with their stage in the organizational life cycle. As noted above, Hannan and Freeman (1984) have argued that significant organizational changes are less likely as organizations increase in age.

These arguments suggest that one way to reconcile potentially competing hypotheses concerning the emergence of hospital federations is to take into account the organizational life cycle of hospitals. The factors that influence hospitals to form federations may vary depending on hospitals' needs for particular resources which, in turn, will be a function of their stage in the organizational life cycle.

This article has developed a set of research questions for theorists and policy makers concerned with the collaborative strategies of hospitals. We identified for analysis several characteristics of organizations and their environments. Perhaps, as McKelvey and Aldrich (1983) suggest, typologies or profiles can be developed of organizations that participate in federations and those that do not. Such typologies can include profiles of the organizations' environments.

Clearly, the hypotheses advanced above call for longitudinal research. We need descriptive research on the development of federations over time to begin to address key questions concerning their behavior.

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