

The processes surrounding the birth of organizations have been explained on the basis of structural contingency, resource dependency, population ecology, and institutional theories. In general, these theories view the role of communication and interpretation as largely unproblematic. We argue that strategically ambiguous messages play a key role in the birth of loosely coupled organizations. The successful birth is contingent on these messages being interpreted differently by key constituencies in the organization's environment. A case study is presented in support of this argument.

STRATEGIC AMBIGUITY IN THE BIRTH OF A LOOSELY COUPLED ORGANIZATION The Case of a **\$50-Million** Experiment

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In recent years, organizational researchers have expressed a growing interest in the emergence of organizations (e.g., Cameron, Kim, & Whetten, 1987; Covaleski & Dirsmith, 1988; Hambrick & D'Aveni, 1988; Katz & Gartner, 1988; Kimberly, 1979; Marrett, 1980; Romanelli, 1989; Saunders & Kreps, 1987; Singh, 1990; Weitzel & Jonsson, 1989). This interest is in response to past theory and research that "assumes the existence of a relatively fixed organizational structure and does not inquire into its etiology" (Kimberly, 1980, p. 3). Further, studying processes leading to the birth of organizations provides researchers the opportunity to examine how these "prehistory" processes mold and constrain the organization's future structures and practices (Gersick, 1991; Pennings, 1980; Sarason, 1972).

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As a result, the most important early contributions on organizational birth have not come from organizational theory but from the literature on entrepreneurship (Howell, 1972; Litzinger, 1965; McClelland, 1965) and on program planning (Delbecq & Van de Ven, 1971; Van de Ven & Koenig, 1976). However, wittingly (or unwittingly), research and theorizing on organizational birth have adopted one (or more) of four organizational theoretical perspectives: structural contingency theory (Miles & Snow, 1978), resource dependency theory (Pfeffer & Salancik, 1978), population ecology theory (Hannan & Freeman, 1977, 1984), and institutional theory (Meyer & Kowan, 1977). In this article, we begin by reviewing what each of these perspectives suggests about organizational birth. Next, we observe that the processes implied by these perspectives assume a rather simplistic view of communication and interpretation (Axley, 1984). We argue that the successful birth of an organization is often accompanied by the presence of strategically ambiguous messages that foster multiple interpretations. Further, we argue that strategically ambiguous messages are particularly helpful in the creation of loosely coupled organizations (Orton & Weick, 1990). As evidence, we present a case study of the birth of a \$50-million interdisciplinary research facility at a midwestern university.

THEORETICAL PERSPECTIVES ON ORGANIZATIONAL BIRTH

Structural contingency theory is based on the premise that organizational success depends on the existence of a “good fit” between internal organizational variables such as structures (Bums & Stalker, 1961; Thompson, 1967), strategy (Miles & Snow, 1978), and technology (Woodward, 1965) and external environmental characteristics such as uncertainty and equivocality (Huber & Daft, 1987). Hence, according to the structural contingency perspective, the successful creation of an organization depends on adopting the appropriate internal structures, strategy, and technology to match the characteristics of the organization’s environment. Drawing on

literature on program planning and innovation, Van de Ven (1980) demonstrates how a planning process model (PPM) helped shape the early structuring of child-care organizations

Resource dependency theory (Pfeffer & Salancik, 1978) rejects the notion of the rational "fit" proposed by the contingency theorists. Instead, resource dependency theorists view organizations as open systems whose actions are largely constrained by other organizations in the environment. They propose that organizational action is in part explained by the conditions and constraints in which a focal organization is embedded. Specifically, a focal organization's actions are influenced by those elements in its environment that provide the focal organization with resources (such as materials, money, information, or social legitimacy) that are valuable and not easily available from alternative sources.

Thus, according to the resource dependency perspective, organizations exist in highly interdependent relationships. They may compete with each other for the same resources or enter into an arrangement in which they can help each other obtain the resources they need. Hence resource dependency theory predicts that the successful birth of an organization depends on the ability of the founders to forge appropriate resource dependence links with various constituencies in the organization's environment. Several studies have demonstrated the significance of identifying resource dependencies in the creation of an organization (Churchill & Lewis, 1985; Marrett, 1980; Neiswander, 1985; Sandberg & Hofer, 1986; Saunders & Kreps, 1987).

The population ecology perspective goes even further than the resource dependency perspective in emphasizing the external control of the environment. Population ecologists argue that the internal processes of the organization have little, if anything, to do with the organization's ability to survive (Aldrich, 1979; Hannan & Freeman, 1984; McKelvey, 1980). Instead, the organization's survival is dictated by its ability to fit into specific niches in the organization's ecological environment. The organization's survival depends on the existence of some excess demand for a service or product. Population ecologists refer to this untapped demand as excess-carrying capacity (Brittain & Freeman, 1980). Hence, according to the

population ecology perspective, the chances of survival for a new organization are a function of the environment's carrying capacity.

Organizations are likely to be stillborn or confront premature death if this carrying capacity does not exist. This phenomenon has been described as the "liability of newness" (Carroll, 1983; Singh, Tucker, & House, 1986; Stinchcombe, 1965) or the "liability of adolescence" (Briiderl & Schiissler, 1990). Singh (1990) notes that population ecologists have focused more on the survival of organizations than on the birth of new organizations, a process he terms *speciation* (for an exception, see Lumsden & Singh, 1990). However, several studies have documented the notoriously poor survival rate among new and adolescent organizations (for a review, see Romanelli, 1989).

The institutional perspective, in contrast to the theories discussed above, shifts attention away from the so-called "technical" environments-characterized by the exchange of goods and services in a market-toward institutional environments, characterized by "the elaboration of rules and requirements to which individual organizations must conform if they are to receive support and legitimacy from the environment" (Scott & Meyer, 1983, p. 149). The most important actors in an organization's institutional environment are not its customers or its competitors, but "other types of actors, such as the state and professional associations, that shape organizational life both directly by imposing constraints and requirements and indirectly by creating and promulgating new rational myths" (Scott, 1987, p. 499). Institutional theorists reject the view that organizations rely solely on their relational networks and exchange processes. Instead, they argue that the creation and elaboration of organizations can in part be attributed to the existence of "rational myths" or shared belief systems.

DiMaggio and Powell (1983) suggest that organizations look similar because they develop structures that are deemed appropriate on the basis of these shared belief systems. Meyer and Rowan (1977) describe these as institutionalized organizations. Influenced by Berger and Luckmann (1967), they define institutionalization as the process by which actions repeated over time are assigned similar meanings by different actors. Hence, according to the institutional perspective, the successful birth of an organization

depends on its founders' capacity to gain legitimacy through the creation and adoption of rational myths and a shared belief system in the institutional environment.

Weick (1976) notes that academic organizations are not structured in order to be efficient. Instead, the structure is imposed by the ritual of certification and acceptance by the organization's key internal and external constituents. This argument is supported in a study of organizational structures at universities by Alpert (1985a):

In a few recently established campuses, for example, the University of California at Santa Cruz and the University of Illinois at Chicago, there were at the outset significant departures from the norm, with unorthodox organizational structures intended to support a distinctive campus mission. After the first few years of operation, however the pressures (both internal and external) to adopt more conventional structures were inexorable. (p. 253)

Although many of the studies on the emergence of organizations do not explicitly identify with one (or more) of the four perspectives described above, their findings lend support to them. However, like the majority of work based on these four traditions, research on the emergence of organizations tends to regard communication in a tangential manner (Euske & Roberts, 1987). The following section critiques the communication implications of these theories and proposes an alternative perspective that casts the communicative process as central in the creation of an organization.

THE ROLE OF COMMUNICATION IN THE CREATION OF ORGANIZATIONS

In addition to the distinctions discussed above, the four organizational theories also differ in their conceptualizations of organizational communication. Traditionally, organizational theorists have viewed communication as the mechanistic transmission of information to reduce uncertainty in the organization and its environment (Krone, Jablin, & Putnam, 1987). This led to an emphasis in articulating and addressing the problems associated with "information logistics" (Huber & Daft, 1987). Communication and information systems were viewed as "physical" structures to carry

messages across and within the organization's boundaries. Researchers suggested improving information-scanning strategies to avoid information under-load. Dysfunctions, such as information overload and message delay, were remedied by strategies such as message routing or message summarizing.

Structural contingency theory argues for the importance of a fit between the organization's environment and the organization's formal communication and information infrastructure. This view suggests that organizations must design communication and information systems that reduce uncertainty in their environment (Daft & Huber, 1987; Daft & Lengel, 1986; Galbraith, 1973). Resource dependency theory emphasizes the significance of inter-organizational communication networks. It views information as one of the resources transacted through communication links between organizations. Hence, for resource dependency theorists, communication is central to the creation of joint ventures (Adams, 1980; Eisenberg et al., 1985), co-opting outsiders who control significant resources (Burt, 1980; Pennings, 1981), and forming trade associations to further common interests. Population ecology theory, with its interest in monitoring excess carrying capacity, focuses on the importance of communication systems to gather market information from the environment (Katz, Levin, & Hamilton, 1963).

These descriptions suggest that structural contingency, resource dependency, and population ecology theories view communication from a "conduit" metaphor (Axley, 1984). They assume that organizations exist in objective information environments and once information is obtained, the interpretation of the information transmitted is largely unproblematic. However, Huber and Daft (1987) question these assumptions, arguing instead that organizations are often confronted with equivocal information that is prone to multiple interpretations. These interpretations are shaped and constrained by the shared meanings that organizational members develop through interaction. This decidedly subjective view of the information environment suggests that issues of "information interpretation" are distinct from, and at least as important as, issues of "information logistics."

The institutional perspective acknowledges the role played by interpretation in the creation of organizations. It views the creation of organizations as the development of shared meaning systems that legitimize and rationalize, both internally and externally, the organization's goals and competence. Organizational structures and practices are viewed as symbols that take on meaning through interaction (Feldman & March, 1981). Hence, unlike the remaining three perspectives discussed above, the institutional perspective conceptualizes communication as a process of shared sense making (Daft & Weick, 1984; Putnam & Pacanowsky, 1983).

Much of the early research on organizations from an interpretive perspective, including work on institutional theory, was based on the assumption that in effective organizations interpretations should be shared by all members. This assumption is well exemplified in the notion of a "strong culture" in the popular management literature (e.g., Deal & Kennedy, 1982). However, recent work on organizations as interpretative systems has noted that meanings are never fully shared (Barley, 1983; Barnett, 1988; Carbaugh, 1988; Contractor, Eisenberg, & Monge, 1992; Donnelon, Gray, & Bougon, 1986; Van Maanen & Barley, 1984; Wilkins & Dyer, 1988). According to Van Maanen and Barley (1984), "We are much more likely to find shared understandings and values among members of the same occupational group than among the functionally differentiated . . . members of an organization" (p. 472). Barnett (1988) extends the argument: "As organizations grow, they tend to develop subcultures. . . . This may be due to organizational hierarchy, division of labor, geographical dispersion of work units, differential professional socialization, or environmental demands" (Falcione & Kaplan, 1984, p. 105).

Further, contrary to views expressed in the popular management literature, scholars do not necessarily view these differences as dysfunctional. In fact, many contemporary scholars take the position that differing interpretations of key organizational symbols are to be expected, that diversity is typical and not necessarily a sign of ineffectiveness within the organization (Gray, Bougon, & Donnelon, 1985; Mitchell, 1985) or at the interorganizational level (Barley, Meyer, & Gash, 1988; Fiol, 1989). Some even argue that

multiple interpretations should be purposefully cultivated to promote autonomy, creativity, and organizational adaptability to environmental jolts (e.g., Eisenberg, 1984; Keesing, 1974; Weick, 1979). Although tensions between interpretations can be a cause of conflict, they may also be a source of "individual and organizational transformation" (Gray et al., 1985, p. 83). Eisenberg (1984) suggests that organizational members may use "strategically ambiguous" messages to foster such transformation and that the ambiguity of such messages permits individuals to behave as if they are in agreement while simultaneously maintaining radically different interpretations. He calls this *unified diversity*, and argues that it can be functional so long as expectations for coordinated action are clear.

In an organization that is just being created, strategically ambiguous mission statements are interpreted by each of the constituencies as providing them with resources that are of special interest to them. These "resources" may include tangibles like material benefits, or nontangibles like social legitimacy. These multiple interpretations lead to expectations of coordinated action by the constituencies. The unified diversity thus achieved will lead to the successful creation of a new organization. Hence, from a unified diversity perspective, we argue that the birth of an organization can be facilitated by strategically ambiguous mission statements. These mission statements are interpreted differently by key constituencies within the organization and its environment, but lead to expectations of coordinated actions among the constituencies.

The unified diversity perspective is better suited to explain the birth of certain types of organizations. Specifically, we propose that the unified diversity perspective is more influential in the creation of loosely coupled organizations than it is in the creation of tightly coupled organizations (Orton & Weick, 1990; Weick, 1976). An example of a tightly coupled organization is a manufacturer that uses routine, clearly defined mechanisms to evaluate organizational output and efficiency (Ouchi & Maguire, 1975). Individuals in such organizations typically have limited autonomy and close supervision; their tasks are well-defined. In contrast, loosely coupled organizations produce an output that is difficult to evaluate precisely. Members of these organizations have greater autonomy and

less supervision, and their tasks are not as clearly defined. They use a number of ambiguously defined mechanisms to determine just how well the organization is doing. March (1987) suggests that ambiguity helps preserve organizational members' autonomy in such cases by allowing for a loose coupling between information activities and decision activities. Weick (1976) notes that organizational members will see and talk clearly only about those aspects of the organization that are tightly coupled. In contrast, they will be purposefully vague when describing those aspects of the organization that are loosely coupled.

Researchers suggest that academic organizations are often loosely coupled systems (Birnbaum, 1981; Cameron et al., 1987; Clark, 1983; Rubin, 1979; Weick, 1976). In educational organizations "there is loose control on the work- the work is intrinsically uninspected and unevaluated or if it is evaluated it is done so infrequently and in a perfunctory manner" (Weick, 1976, p. 11). The presence of a loose coupling between the curricula and the goals of an educational organization suggest that an "increasing vagueness of description should occur when issues of substantive instruction. . . are discussed" (Weick, 1976, p. 12). It is exactly this "vagueness of description" in loosely coupled systems that provides an opportunity for an organization to link its goals to diverse interpretations by key constituents (Orton & Weick, 1990; Salancik, 1975). Hence, according to the unified diversity perspective, the presence of strategically ambiguous mission statements are especially well suited to facilitate the birth of a loosely coupled organization, in which technologies and outcomes are unclear.

The remainder of this article describes the creation of a loosely coupled organization-a new interdisciplinary research center, which we call IDRES — at a major midwestern university. In particular, we will examine the role played by unified diversity in the creation process.

THE CREATION OF IDRES -A \$50-MILLION CASE STUDY

IDRES was recently created at a major midwest research university. It is one of the largest and most ambitious university-based

interdisciplinary research facilities in the country. The official brochures suggest that IDRES is an experiment based on the assumption that science has evolved to the point that many of the problems now to be addressed demand radically new approaches. An observer, familiar with the creation of IDRES, notes that "the problems we have to conquer are so complex that no one specialty can possibly solve them" (Holstein & Port, 1988, p. 131). The assumption, gaining currency at several major U.S. universities, is that reducing the barriers between disciplines is likely to yield scientific advances that would be difficult, if not impossible, to achieve using traditional approaches. At Brown University, only 40 of the 75 academic units are traditional departments. Of the remaining 35 units, 25 have been created since 1977 (Kates, 1989). Kates also notes that "the University of Chicago alumni magazine recently featured Allan Bloom's call for a return to the traditional study of Western civilization and the great books, but in the same issue announced the establishment of three new interdisciplinary centers" (p. B1). Meanwhile, Stanford has announced a 6-year plan for the construction of a \$350-million science campus. Instead of following the lines of traditional academic buildings, the so-called Near West campus is basing the design on the way scientists of different disciplines interact and cooperate (Buder, 1989).

Business Week describes the creation of organizations such as IDRES, one of several such initiatives at universities across the nation, as possibly "the most audacious interdisciplinary research effort" ever attempted (Holstein & Port, 1988, p. 131). On the surface, these experiments are being designed to test the hypothesis that "almost none of the great questions of science, scholarship, or society fit in single disciplines and many such questions are best pursued collaboratively" (Kates, 1989, p. B1). But the real story behind the creation of IDRES is more complicated. \$50-million experiments do not get started simply because science demands that they be started. In fact, many scientists are far from convinced that the questions these experiments set out to answer are the most pressing problems science should be addressing right now. And many university researchers are extremely wary about entering into the kind of interdisciplinary research effort that IDRES represents. Why, then, was IDRES created? Consistent with arguments devel-

oped above, we discovered that the loosely coupled IDRES was created because its strategically ambiguous mission was perceived by the various key constituencies- university administrators, state government, industry, and researchers — as providing them with much-needed resources.

DATA COLLECTION

The research reported in this article is part of a larger study on scholarly communication and information transfer among scientists at IDRES that began in 1989. We began by interviewing five university officials who played major roles in creating IDRES and who are now responsible for its administration. We also reviewed (a) relevant interviews and editorials in the local and national press, (b) personal correspondence among key players involved in the creation of IDRES, (c) transcripts of speeches delivered by university officials and visitors at IDRES events, and (d) official university brochures, documents, and press releases relating to IDRES. In addition, we also conducted semistructured hour-long interviews with the 147 faculty members who currently are working at IDRES. We asked them about their specific research interests, their interpretations of the mission of IDRES, and their notions about interdisciplinary research. Table 1 provides a chronological summary of the events leading to the creation of IDRES.

UNIFIED DIVERSITY AMONG UNIVERSITY ADMINISTRATORS, STATE, AND INDUSTRY

The idea for an IDRES was triggered by an old friendship between two men-the director of the university's foundation, and a university alumnus, who had gone on to become a millionaire. The alum, who we shall refer to as Dr. Alum, was a native of the state and had graduated from the university in 1922 with a degree in chemical engineering. He went on to found a large chemical instruments company that was taking in more than \$600 million annually by the early 1980s. By the time the company merged with a pharmaceutical manufacturer in 1982, Dr. Alum had acquired a

TABLE I: **Timeline** for the Creation of IDRES

1982	Dr. Alum's company merges with a pharmaceutical manufacturer. Dr. Alum considers donating some of the proceeds for the advancement of science and technology.
Winter 1983	University officials discuss proposal for new facility to attract major gift from a private donor.
May 1983	Vice chancellor appoints two faculty committees to write proposals for interdisciplinary facility.
August 1983	The two faculty committees submit their reports to the vice chancellor.
Fall 1983- Summer 1984	University officials fuse two proposals into a single proposal to be submitted to Dr. Alum.
September 1984	University officials submit first proposal to Dr. Alum.
February 1985	State's governor promises Dr. Alum substantial state support for proposed new interdisciplinary facility.
July 1985	University officials submit supplemental proposal to Dr. Alum, outlining proposed facility in more detail.
October 1985	University officials announce Dr. Alum will give \$40 million and state will pledge \$10 million toward creation of the IDRES.
October 1986	IDRES groundbreaking ceremonies.
April 1988	Officials announce names of programs and researchers to be located at IDRES.
December 1988	Construction of IDRES almost complete; researchers begin to move in.
April 1989	IDRES inaugural ceremonies.

considerable sum of money that he chose to donate to worthy causes. In the following sections, we chronicle the role played by the university's administration, the state, industry, and the university's research community in the creation of IDRES.

IDRES AND THE UNIVERSITY'S ADMINISTRATION

At the time the IDRES was first proposed -early 1983 -the state, like much of the nation, was in a recession, and the university was feeling the pinch. The then vice chancellor for research, now the director of the IDRES, notes that the university was suffering from tight budgets and that "these were not the cheeriest of times for the campus" (Director, IDRES, personal communication, April 12, 1989). The director of the university's foundation observed that many were worried that the university was losing its competitive edge. The director of the foundation had known Dr. Alum and his wife for many years, and he suggested one worthy cause to him —

the university. Based on these conversations, he was convinced that Dr. Alum did not want to give money to a public university simply to help it meet its basic operating needs, to keep “its head above the water.” Instead, Dr. Alum wanted to give money for excellence, for existing projects that the state might not normally fund on its own. Therefore, university administrators had plenty of fiscal incentive to create an organization that would be perceived by alumni to be bold and adventuresome.

University officials “knew from the analysis of our space situation that we were many hundreds of thousands of square feet short of what we needed to maintain a really first-class research operation” (Director, IDRES, personal communication, April 12, 1989). The shortage of space and research facilities at U.S. universities has reached endemic proportions. A 1988 survey by the National Science Foundation found that schools said they needed \$11.7 billion to renovate or build research facilities but could only afford \$3.1 billion. Furthermore, for the two decades prior to the Academic Research Facilities Modernization Act of 1988 there was no government program to support general research facilities (Buder, 1989). Like their colleagues elsewhere, the university’s administrators were looking for ways to provide additional research space and make up for a loss of state support. They also wanted to do something audacious and exciting in order to leapfrog ahead and enhance the university’s prestige and competitive edge.

The creation of a large-scale interdisciplinary research facility would attract interest and support from large private donors and at the same time address important needs as perceived by the university’s administrators. It would go a long way toward easing the shortage of research space on campus. It also was a politically astute move that would serve several departments on campus, without benefiting one at the expense of another. It was the kind of facility the state normally would not pay for on its own. Traditionally, the state might pay for an addition to a chemistry building, but not for a giant new interdisciplinary research facility. Of course, such a facility would add immensely to the university’s prestige and act as a magnet for top researchers and private dollars. Finally, thanks to the close friendship university officials had with Dr. Alum, they

knew they had a prospective donor who might be receptive to the right proposal. Clearly, university officials had to walk a fine line in convincing Dr. Alum of the need for such a facility at the same time they tried to convince him of the overall excellence of the university.

The university's proposal to Dr. Alum began with a long summary of the university's many assets and accomplishments: its prestigious faculty, its distinction of being named one of the few sites for a national center on supercomputing applications, and so forth. "Opportunities for the University to extend its reach and to attain even higher levels of excellence are greater than ever before," the proposal noted (*IDRES*, 1985, p. 4). But the proposal went on to note that in spite of all that, "the University faces a crisis. Physical facilities now available are not adequate to support the sophisticated, rapidly changing needs of modern scientific and engineering research" (p. 4). Hence the need for the new *IDRES*:

Our proposal for the *IDRES*, however, is far more than simply a request for bricks and mortar. It is based on a vision of an organizational structure and an operating philosophy that we believe will enhance, even transform the individual research efforts of the faculty. This vision involves an emphasis on individual excellence and on intense interactions among faculty members who are at the forefront of a broad spectrum of different disciplines. (pp. 5-6)

For Dr. Alum, making the gift to a university represented a wise investment. Dr. Alum preferred giving donations to a university research center rather than to a private foundation:

You look at some of the (foundations) and what they are doing, and you'd think their founders must be turning over in their graves. If a foundation is lucky, it has a good board of directors, but so many get addicted to their own way of thinking, and get closed minds, and are not alert to changes. What I like about supporting a university research center is first, the grants are made by a faculty committee, with deans of the different departments. I believe that the faculties of good institutions stay current and are best equipped to decide what researchers deserve support. Second, they see what are the hot spots for research. And third, it's a self-regenerating group; deans change and bring in new people. ("Investing in the Future," 1987, p. 30)

IDRES AND THE STATE

Like many private donors, Dr. Alum had reservations about making a large gift to a public university. He felt that his dollars might be better spent on a private university and that he should not relieve the state of its responsibility to fund public education. Therefore, Dr. Alum made it clear that his donation would be contingent on the state's willingness to support such a project. One of the people who finally convinced Dr. Alum to make the gift was the state's governor. According to remarks the governor delivered at IDRES's ground-breaking ceremony, he met Dr. Alum at a political party function in early 1985. He told Dr. Alum that 1985 was going to be known as the "Year of Education" in the state, and that he and the state legislature would show Dr. Alum that they were committed to developing links between higher education and high technology research. In effect, the governor personally promised Dr. Alum that the state would provide matching funds for the proposed new facility even before Dr. Alum had announced whether he would make the gift. With that promise in mind, Dr. Alum finally agreed to donate \$40 million to the university, to be combined with \$10 million in state matching funds to create a new interdisciplinary research facility that would be known as IDRES. The \$50-million experiment was conceived. For the state's governor, it meant the promise of new technology for his state, along with the promise of more jobs, more prestige, and, presumably, more votes when he ran for reelection. It also let the state "off the hook" in a sense—rather than having to pay the entire \$50 million for a new state university facility, the state only had to put up one fifth of that. Yet state officials were able to bask in the reflected glory of Dr. Alum's gift. Therefore, the mission of IDRES was seen as meeting important perceived needs by the state and its political leaders.

IDRES AND INDUSTRY

Business leaders were also impressed by the opportunities such a facility would offer to industry. One was the chief executive officer (CEO) of one of the country's largest semiconductor and com-

munications hardware manufacturers. His company, headquartered in the state, would help support the university's national center for supercomputing activities, which was eventually located in the same building as IDRES. The CEO was invited to speak at IDRES's inaugural ceremonies. He noted that the future of computer research (and, presumably, the future of his company) would rely heavily on the research performed at places like IDRES. Elsewhere, an out-of-state firm offered to present the university with the gift of a visual simulation system as a way of establishing a foothold at IDRES. A local developer proposed the construction of a \$60-million hotel and office complex one block east of IDRES. And so it went — IDRES was seen as offering all sorts of possibilities for those in industry who were interested in acquiring high technology research and pursuing profits. Hence the interdisciplinary mission of IDRES was perceived by industry leaders as a worthwhile business investment,

IDRES AND THE UNIVERSITY'S RESEARCH COMMUNITY

The creation of IDRES faced its biggest challenge from departments within the university. Interdisciplinary research has been discussed in academe for several years. A recent annotated bibliography lists articles on interdisciplinary research dating back to 1951 (Chubin, Porter, Rossini, & Connolly, 1986). However, Klein (1986) suggests that the discussion of interdisciplinary research dates back even further, to the World War I era. If interdisciplinary research has been a topic of debate for the better part of this century, then why has it not had more of an effect on university curricula and research agenda? Part of the answer can be found in Klein's essay — the debate on interdisciplinary research in the World War I era was triggered in large part by concern over the increasing fragmentation of the "liberal" education tradition, marked by the increasing scientification of knowledge and the growth of the various scientific disciplines.

Kranzberg (1986) notes that the growth of the various disciplines was marked by growing professionalization and specialization, reflected in the establishment of specialized professional organiza-

tions and specialized vocabularies and methodologies. These disciplines took root in university departments, each with its own set of values and priorities, and each with a growing inability to communicate with other university departments. The result has been the creation of what Kranzberg (1986) describes as the “feudal principalities of disciplinary departments” (p. 33), which have proved historically to be major obstacles to interdisciplinary research. Saxberg, Newell, and Mar (1986) note the following:

Faculty leave their discipline-oriented research focus at their own peril. The whole university reward system—merit, advancement, and tenure—rests within the departmental structure. The weight of senior departmental faculty and the chairman of the department is critical in determining who will be recommended for merit, promotion, as well as for tenure. These decisions affect primarily junior faculty members who are working to achieve the security that goes with a tenured appointment. (pp. 195-196)

Hence the efforts of a university’s administration to encourage interdisciplinary research are bound to run into stiff faculty resistance; there are few incentives for faculty to engage in such research. The faculty are more concerned with what is best for their own individual careers and disciplines than what is best for their home universities (Alpert, 1985a). Furthermore, there are cultural barriers between disciplines that cannot be overcome simply by assigning researchers from different disciplines to one building. An IDRES researcher noted that psychologists traditionally share lab space and equipment; having lab space of their very own does not concern them. However, having a good desk of one’s own is very important. Chemists are just the opposite; they are not quite as concerned about office space. Individual laboratory space, however, is extremely important. A planning committee helping design the insides of buildings at Stanford’s Near West science campus concluded that

physicists and engineers, it seems, prefer isolated spaces in the basement where they can control their environment. So they will go underground. Biologists seem to worry less about such control and like to look out of windows. So they will have more scenic spaces, where they can gaze on greenery. (“And the Non-Existent Lab,” 1989, p. 92).

On the basis of these traditional barriers and a “history at other universities where efforts to maintain interdisciplinary research often failed” an editorial in *Science* notes, “it would be easy to scoff at the plans at [IDRES’s university]. However, the university has a good record in interdisciplinary activities” (Abelson, 1985, p. 893). For instance, the university’s Coordinated Science Laboratory is one of the oldest interdisciplinary research centers in the nation. Recent additions include one of the four national centers for supercomputing applications, a center for supercomputing research and development, a center for compound semiconductor microelectronics, a materials research laboratory, and a biotechnology center.

However, as Alpert (1985b) points out, there are important differences in the nature of interdisciplinary centers. Some, such as the materials research laboratory, are designed to provide several departments with shared access to specialized research facilities. These multidisciplinary facilities (MDFs) have a “service” tradition and typically do not have an autonomous research program. In contrast, interdisciplinary mission organizations (IMOs) have as their charter a set of very specific problem-focused goals and targets. For instance, the university’s center for supercomputing research and development had as its mission the construction of a high-performance, large-scale multiprocessing supercomputer by 1989. Finally, interdisciplinary research organizations (IROs) attempt to provide “new settings, new groupings of faculty, and new incentives” (Alpert, 1985b, p. 5) for researchers who want to integrate approaches across traditional disciplines. Unlike IMOs, these organizations do not have specific goals or timelines. Instead, they strive to establish a new scientific culture while creating a new science. An example of an IRO is the university’s national center for supercomputing applications. It attempts to nurture interest in new forms of computational-based intellectual inquiry while contributing to the knowledge base in new fields such as computational physics, computational biology, and computational mathematics. However, Alpert (1985b) notes that the national center for supercomputing applications was the only example of an IRO at the university. Hence if the university was to design the IDRES as an IRO, its past record of interdisciplinary activities could only be of limited help.

Keeping in mind the traditional barriers and the university's past experiences, the then vice chancellor of research, and present director of IDRES, appointed two faculty committees in May 1983. One committee consisted mainly of faculty specializing in engineering, materials science, computers, and computation, and the other consisted mainly of faculty specializing in biology, behavior, and cognition. The two committees were charged with making proposals for broadly interdisciplinary research programs in their respective areas, as well as for the physical and fiscal resources needed to perform such research.

The heads of these committees thought that they were competing against one another, in a sort of "winner take all" battle for whatever gift a private donor might be persuaded to make. The head of one of the committees felt that the perceived competition probably made the two committee's final proposals better than they would have been otherwise. The members on each committee obviously wanted to make sure that their particular departments and disciplines reaped the benefits of a private gift. However, some of the committee members were not at all certain that an interdisciplinary research facility was the best way to go. One committee head recalls ruefully that the "high point" of his committee's meetings came when two faculty members "decided it was palace coup time, and that this interdisciplinary crap had to go." The two committee members said if the university was committed to making a large investment, the money should go into a facility for their own discipline. The vice chancellor promptly replaced the two committee members- "he was not going to have any trek with palace coups" (Chair of one of the committees, personal communication, April 12, 1989). But in general the committee meetings went smoothly, thanks in large part to the initial composition of the committees. The committee members were high-ranking associate professors and young full professors:

There weren't any old fogies on it, and there weren't any really young people on it. They were sort of the movers and shakers of the current and next generation. We just tried to pick out, you know, the people who were the really good people from a research perspective, who would really have insight into what's needed and where to go. I don't know that we thought totally in terms of interdiscipli-

nary things at the outset; because of the composition of the group, in a sense, that interdisciplinary view came out. (Chair of one of the committees, personal communication, April 12, 1989)

In fact, the composition of the two committees was “devilishly clever for coming up with something that eventually was going to fuse into a single whole” (Chair of one of the committees, personal communication, April 12, 1989). The two chairs had a hand in appointing the members of their committees, but the vice chancellor had final authority. He saw to it that experts in both areas were represented on each of the two committees.

Some researchers took this as evidence that the university administration in fact intended to fuse the two committees’ proposals from the very beginning. Whether that was in fact what the administration intended, the two committees’ final proposals turned out to be very similar. One committee proposed a program of research that would begin investigations on a molecular scale and then move on to neuron behavior, in order to try to understand how the brain works. The other committee proposed beginning its investigations on electrons and computer chips, and then moving on to integrated systems and computer architecture. University administrators thus had two proposals that they fused into one large proposal with a strategically ambiguous mission: *“The aim of the [IDRES], broadly stated, is to link the efforts of researchers in many disciplines who are engaged in the quest for a better understanding of human and artificial intelligence”* (IDRES, 1989, p. 3, italics in original).

By involving faculty members from several departments in creating this mission, the university administration was bolstering institutional support for the proposal. University officials could say it was the faculty from a wide range of departments who had come up with the initial proposals, and the administration had simply done what was “logical” and molded the two proposals into one. Hence, by authoring the specifics of the proposal, key faculty members from several disciplines across campus perceived that IDRES might support their research agenda.

IDRES’s stated research mission can be viewed as a strategically ambiguous appeal to the faculty’s professional and institutional orientation. Its interest is not necessarily in reducing the barriers between the scientific disciplines; instead, it is in pursuing interest-

ing research that will build on previous work within their disciplines, get them published, and enhance their professional reputation among their peers. When university officials talk about the potential scientific breakthroughs that the interdisciplinary nature of IDRES will make possible, that is a powerful incentive to faculty to want to participate. They want to have a hand in that research; they want to get their names on the papers that will be published as a result of that research. Evidence from our semistructured interviews with the 147 faculty researchers at IDRES provides support for the strategically ambiguous nature of the mission statement. Researchers who were affiliated with the Artificial Intelligence project group ($N = 16$) unanimously agreed with the letter and spirit of the mission. However, a few ($N = 19$) of the IDRES researchers in other project groups, like signal processing and tunneling microscopy, viewed the "human and artificial intelligence focus" of the stated mission as more of a publicity ploy. They explicitly denied that artificial intelligence was, or should be, IDRES's mission. Most of them ($N = 96$) interpreted the "actual" mission as furthering the advancement and visibility of their own research interests (or methodologies) across disciplines.

SUMMARY OF FINDINGS

IDRES was formally inaugurated in April 1989. Its creation provides us an opportunity to understand the processes leading to the birth of this organization from four traditional organizational perspectives (structural contingency, resource dependency, population ecology, and institutional theories) as well as from the unified diversity perspective. Contrary to predictions based on structural contingency theory, we found no evidence of IDRES adopting a form and structure that were specifically suited to the characteristics of its function or its environment. The form and structure was different from traditional university departments but similar to what exists in interdisciplinary research centers located in academic organizations.

The successful birth of IDRES provides tentative support for explanations based on the population ecology perspective. As de-

scribed earlier, the academic community has expressed an excessive and growing demand for scientific research using an interdisciplinary approach. Thus, by its stated choice of domain for research, IDRES was filling an intellectual niche with excess carrying capacity. Consistent with predictions based on resource dependency and institutional perspectives, the birth of the IDRES necessitated the actual transfer of material and institutional resources. The creation of the IDRES required the enthusiastic support and contribution of several constituencies: private donors, university administrators, state government, private industry, and the existing university departments. These constituencies transferred material and institutional resources to the IDRES in order to ensure the successful birth of the new organization. Each constituency interpreted the strategically ambiguous mission of the IDRES to mean that the new facility would provide them with necessary material and institutional resources in return (Figure 1).

Our findings are most consistent with predictions based on the unified diversity perspective. Private donors were keen on supporting an enterprise that was out of the ordinary—one that would break down existing disciplinary barriers. The university administrators viewed IDRES as an experiment which, if successful, would garner national prestige for the university. They also saw IDRES as an equitable means of distributing much-needed physical and material resources across several departments. State government viewed their \$10-million contribution as a relatively inexpensive investment to boost the state's commitment to education, stimulate the local economy, gain recognition among political and business leaders nationwide, and last but not least, win the support of the electorate. Private industry considered it as an opportunity to foster technology transfer. Researchers perceived IDRES as providing them with an opportunity to do cutting edge basic research in order to reinforce the stature of their own professional careers.

Finally, we predicted that strategically ambiguous mission statements were especially effective in creating loosely coupled organizations. The IDRES, with its structural similarities to educational organizations, demonstrates several characteristics of a loosely coupled organization. The researchers are not subject to close inspection. Individual researchers are invested with considerable

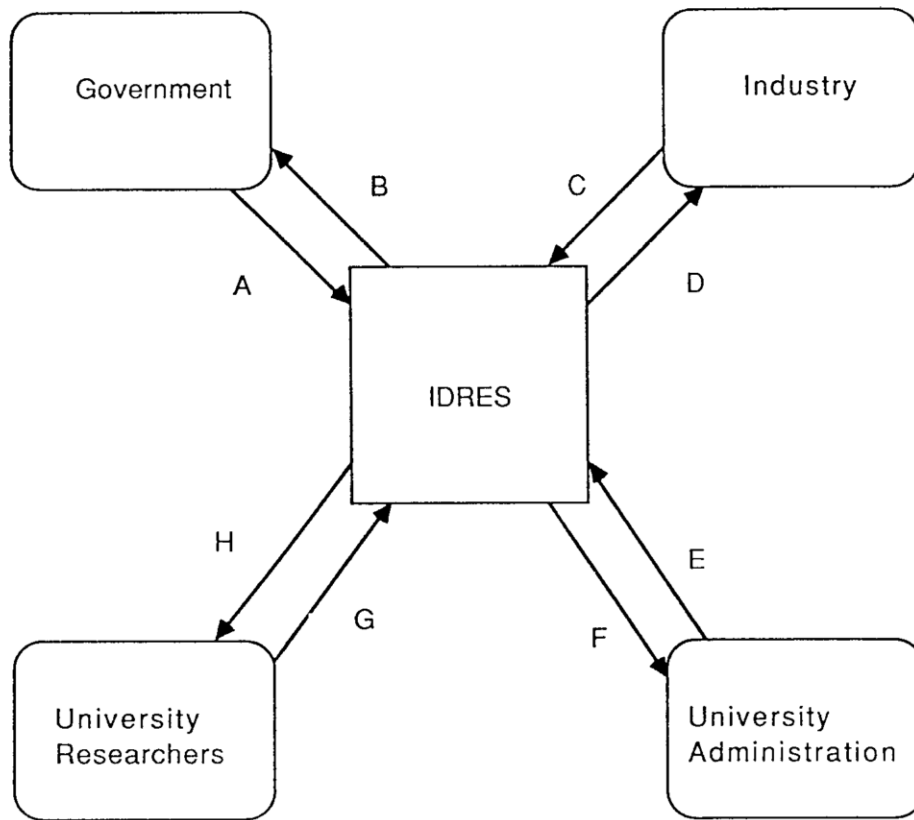


Figure 1: Resources given and anticipated by key constituencies of IDRES

NOTE: A = Resources government gives IDRES: money, maintenance, research grants

B = Resources government anticipates from IDRES: technology transfer, legitimacy, jobs, economic development, electoral support

C = Resources industry gives IDRES: equipment, money, technical advice

D = Resources industry anticipates from IDRES: technology transfer, trained work force, investment opportunities

E = Resources university administrators give IDRES: institutional support

F = Resources university administrators anticipate from IDRES: space, prestige, ability to attract distinguished faculty and external funding

G = Resources university researchers give IDRES: researchers, graduate assistants

H = Resources university researchers anticipate from IDRES: opportunities to do cutting edge research and interact with faculty from other disciplines.

autonomy in the conduct of their specific research programs and the choice of their research collaborators. Thus IDRES falls into the category of loosely coupled organizations that Weick (1976) describes as “holding companies containing shares of stocks in uninspected activities and subunits which are largely given their

meaning, reality, and value in the wider social market" (p. 14). Our study indicates that, aided by the ambiguous nature of its task and its potential outcomes, the loosely coupled IDRES was especially well suited to foster multiple meanings among various constituents in this social market.

IMPLICATIONS AND DIRECTIONS FOR FUTURE RESEARCH

In the field of organizational theory, there has been limited research on the processes leading to the birth of an organization. When researchers have studied organizational birth they have not given much attention to the role played by communication during this process (for an exception, see Rogers & Gibson, 1988). The present study begins to provide a theoretical understanding of the communication processes surrounding the birth of an organization. Our main conclusion from the present analysis is that during the successful creation of a loosely coupled organization, strategically ambiguous communication leads to the creation of multiple interpretations among various constituencies. Their ability to coordinate action, notwithstanding differences in perceptions, is evidence of unified diversity.

The birth of an organization can be viewed as an illustration of the equifinality in interpretive systems. Each of the constituencies worked toward a common goal, the successful birth of IDRES, while holding very different interpretations of what it was they were creating. The principle of equifinality has been applied to interpretive systems within the organizational context (Donnelon, Gray, & Bougon, 1986). Our findings suggest that this general principle is just as relevant to interorganizational systems and to the birth of new organizations within such systems.

Our findings suggest a number of possible research directions, four of which will be noted here. First, we noted earlier that the unified diversity perspective is more likely to be found in some organizations than in others. Our study suggests that it proved to be an especially useful explanatory framework in the study of loosely

coupled organizations. In proposing an agenda for research on loosely coupled systems, Weick and his colleagues (Orton & Weick, 1990; Weick, 1976) note that researchers have not given much attention to the study of the loosely coupled system as a "dependent variable." How does it happen that a series of activities is assembled into a loosely coupled organization? Our preliminary response here is that strategically ambiguous communication plays a key role in the assembly of such loosely coupled organizations. Future studies might indicate informative patterns across different types of organizations.

Second, this study has focused on the processes accompanying the successful birth of a loosely coupled organization. It does not follow that processes that were effective at this stage will continue to be effective as the organization continues its evolutionary path. In tracing the history of a medical school, Kimberly (1980) notes that the features that made the school "initially successfully as an innovation became increasingly incompatible with those things that appeared to be requirements for long-run success" (p. 16). Like many loosely coupled systems, IDRES can at this time be viewed as a "fragile structure shored up by consensual anticipations, retrospections and understanding" (Weick, 1976, p. 14). As in other loosely coupled organizations, IDRES does not have any specific targets or milestones with which to gauge its success. The collective sense-making efforts of the key constituents will in large part determine the success of this \$50-million experiment. Asked to provide a bench mark for success, the director of IDRES echoed the sentiments of many observers when he said, "I will know it in my heart." As with other loosely coupled systems, IDRES will face pressure from other organizations in its environment to **disambiguate** its mission. However, doing so may only exacerbate its competition with traditional departments at the university for financial and material resources. Furthermore, the current academic leaders who achieved their status in the traditional department system may resist the emergence of alternative cultural norms at IDRES. Future research should provide insights into the conditions under which the fragile structures conducive to the birth of loosely coupled organizations dissolve or become more resilient over time.

Third, because of our focus on differences in perceptions between constituencies, we have glossed over differences in interpretations that are inevitable within each of these constituencies. Future research must face the challenge of dealing with diversity in interpretations both within and between these constituencies. Fourth, and finally, it is not our contention that the data collection strategies we used to muster support for our arguments are the only, or even the best, way to study the existence of multiple interpretations among the constituencies. Future research should consider the use of multiple methodologies including the root metaphor approach (Koch & Deetz, 1981; Smith & Eisenberg, 1987), semantic network analysis (Contractor, Eisenberg, & Monge, 1992; Monge & Eisenberg, 1987), and semiotic analysis (Barley, 1983; Fiol, 1989).

PRACTICAL IMPLICATIONS

In a decade characterized by a decline in venture capitalism and an upswing in mergers and acquisitions, the complexities surrounding the process of organizational birth are increasingly relevant to today's business leaders. The popular management literature has alerted practitioners to the notion that some of the skills required to be a successful business leader are more akin to evangelism than accounting (Peters, 1987). Business leaders increasingly see themselves as effective communicators and managers of symbols. The unified diversity perspective espoused in this article serves to alert business leaders that effective communication among key constituencies within and outside the organization does not always have to be unambiguous. And the management of meaning does not always imply promoting greater homogeneity of interpretations. Furthermore, the specific application of the unified diversity perspective to the birth of an organization suggests that effective business leaders should not confine their skills in the strategic use of communication to intraorganizational contexts. In the light of these implications, we believe that organizational communication researchers should focus more attention on the use of strategically ambiguous mission statements that accompany the successful birth of an organization.

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A descriptive model of conflict-handling behavior was developed in an inductive investigation aimed at overcoming problems of assuming two dimensions of conflict behavior. The model delineates and defines strategy categories based on actor-salient aspects of specific behavior in specific situations. Ninety full-time employees of different organizations provided written accounts of recent conflicts in which they were involved at work. Using a grounded theory approach, strategy descriptions were subjected to constant comparison analysis. The emergent categories were then expanded into a three-dimensional taxonomic model of conflict-handling behavior. Further development of the model is addressed and advocated. Finally, implications for theory and research are discussed.

BEYOND TWO DIMENSIONS

A Grounded Theory Model of Conflict-Handling Behavior

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When humans gather, conflict is inevitable. Written works about interpersonal conflict in the organization (e.g., Bisno, 1988; Blake, Shepard, & Mouton 1964; Burke, 1970; Coombs & Avrunin, 1988; Coser, 1956; Darling & Brownlee, 1984; Deutsch, 1973; Folger & Poole, 1984; Gerstein & Reagan, 1986; Hall, 1969, 1973, 1986; Jandt & Gillette, 1985; Katz & Lawler, 1985; Kilmann & Thomas, 1975, 1977; Litterer, 1966; Luthans, Rosenkrantz, & Hennessey, 1985; Mathur & Sayeed, 1983; Putnam, 1988; Putnam & Poole, 1987; Putnam & Wilson, 1982; Rahim, 1983; Renwick, 1977; Ross & DeWine, 1982, 1987; Ruben, 1976; Shockley-Zalabak, 1984; Thomas & Kilmann, 1974; Turner & Weed, 1983; Wilson & Waltman, 1988) seem nearly as ubiquitous as the occurrence of conflict itself. The "conflict styles" tradition is the dominant approach in both the scholarly and applied arenas. The styles approach

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