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CULTURAL CONGRUENCE, STRENGTH, AND TYPE:
RELATIONSHIPS TO EFFECTIVENESS

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ABSTRACT

This study investigates the relationship between the congruence, strength, and type of organizational cultures and organizational effectiveness. Past literature is filled with propositions that strength and congruence of an organization's culture are associated with high levels of performance. A comparison of the cultures of 334 institutions of higher education revealed that no significant differences in organizational effectiveness exist between those with congruent cultures and those with incongruent cultures. Similarly, institutions with strong cultures are no more effective than institutions with weak cultures. The study did point out, however, that the type of culture possessed by institutions--clan, adhocracy, hierarchy, or market cultures--has an important relationship with effectiveness as well as with other organizational attributes. Cultural type appeared to be more important in accounting for effectiveness than congruence or strength. Implications for managers are drawn from these results.

A substantial amount of attention has been paid to the concept of organizational culture in the past several years. Conferences, symposia, special issues of journals, and a multiplicity of research reports have appeared focusing on culture and its relationship to organizational performance. The conventional wisdom espoused by most authors asserts that a strong culture, a congruent culture, and a culture that supports the structure and strategies of the organization is more effective than a weak, incongruent, or disconnected culture. For example, Peters and Waterman (1982), Deal and Kennedy (1981), O'Reilly and Moses (1983), and others asserted that a strong culture is associated with organizational excellence. "...a strong culture has almost always been the driving force behind continuing success in American business (Deal and Kennedy, 1982, p. 5)." Quinn (1980), Tichy (1982), Salmans (1983), Broms and Gahmberg (1983), Wilkins and Ouchi (1983), and others argued that a culture supportive of organizational strategies leads to high performance. "...to be successful, a company's culture needs to support the kind of business the organization is in and its strategy for handling that business (Tichy, 1982, p. 71)." Cultural "fit" or congruence is a theme espoused by Nadler and Tushman (1980), Quinn and Hall (1983), Kotter (1980), and others, who suggested that a variety of cultural attributes must be aligned to produce effectiveness. "Other things being equal, the greater the total degree of congruence or fit between the various components, the more effective will be organizational behavior at multiple levels" (Nadler and Tushman, 1980, p. 275).

The purpose of this study is to investigate the relationship between the congruence and strength of organizations' cultures and the effectiveness of those organizations. The intent is to explore the linkages between culture and effectiveness in a variety of organizations to determine the extent to

which the assumptions of past authors can be supported. To do so, however, it is first necessary to discuss the concept of culture and to introduce a model for categorizing different cultural types.

The Understructure of Culture

The culture of an organization is difficult to assess objectively since it is grounded in the taken-for-granted, shared assumptions of individuals in the organization. These shared assumptions and understandings lie beneath the conscious level for individuals. They generally are identified through stories, special language, artifacts, norms, and creations that emerge from individual and organizational behavior (see Wilkins and Ouchi, 1983; Sathe, 1983; Schein, 1982; Deal and Kennedy, 1982; ASQ, 1983.) The nature of these preconscious, shared assumptions has been the focus of investigations by a number of psychologists who assert that "axes of bias" (Jones, 1961) or "psychological archetypes" (Jung, 1973) organize individuals' interpretations of reality into a limited number of categories. These categories help identify the different frames used by individuals to organize underlying assumptions. Consequently, these categories also can be used to identify certain types of cultures in organizations (see Mitroff, 1983; Neumann, 1955, 1970; Jaynes, 1976).

One conclusion that has emerged from research on psychological archetypes is the commonality that is typical of the underlying axes of bias used to interpret and categorize information. That is, similar categorical schemas have been found to exist in the minds of individuals across a wide variety of circumstances.

The more that one examines the great diversity of world cultures, the more one finds that at the symbolic level there is an astounding amount of agreement between various archtypal

images. People may disagree and fight one another by day but at night they show the most profound similarity in their dreams and myths. The agreement is too profound to be produced by chance alone. It is therefore attributed to a similarity of the psyche at the deepest layers of the unconscious. These similar appearing symbolic images are termed archetypes (Mitroff, 1983, p. 85).

Psychological archetypes serve to organize the underlying assumptions and understandings that emerge among individuals in organizations which become labelled cultures. They establish "patterns of vision in the consciousness, ordering the psychic material into symbolic images" (Neumann, 1963, p. 6).

A variety of frameworks have been proposed for conceptualizing these underlying archetypes or axes of bias, but one of the most well-known and widely researched was developed by Jung (1923). The appeal of the Jungian framework for this investigation is that substantial amounts of research exist to support its validity, and the dimensions of the framework have been directly related to managerial and organizational styles (Myers, 1976; Keen, 1981; Mason and Mitroff, 1973; Wade, 1981). Even though the Jungian dimensions were originally posited to identify personality types, "the Jungian framework can be used to shed insight on organizational and institutional differences [as well]" (Mitroff, 1983, p. 59). A brief review of evidence for this conclusion is provided before continuing with the discussion.

The Jungian framework focuses primarily on the manner in which individuals gather and evaluate information. It was made operational through the development and refinement of the Myers-Briggs Type Indicator by Myers (1962). Subsequently, a substantial amount of research was conducted by the Educational Testing Service and other social science researchers on cognitive and behavioral differences among individuals and groups using the framework

(for example, CAPT, 1980; McCaulley, 1977; Myers, 1980; Churchman, 1964, 1971; Mason and Mitroff, 1973; Henderson and Nutt, 1980). In particular, management and organizational researchers have found support for the utility of the framework in management and organizational behavior applications. Quinn and Rohrbaugh (1981) and Carrier and Quinn (1985), for example, independently derived the same dimensions as those upon which the Jungian framework is based in analyses of organizational effectiveness criteria and on leadership styles. These dimensions accounted for approximately 90 percent of the variance in differences among the models of effectiveness in one study and in leadership types in another. Driver (1979, 1984) found evidence for individual decision or information processing styles that match the Jungian framework and that help explain differences in person-organization fit. Mitroff and Kilmann (1975, 1976, 1978) studied managerial behavior and found a fit between the Jungian framework and important management style differences. Mason and Mitroff (1973) found differences in the types of organizational stories told by managers to describe their organizational cultures. These story types were organized on the basis of the Jungian dimensions. McKenney and Keen (1974) found different types of problem solving styles in three studies of MBA students at Harvard. The differences among the students were interpreted on the basis of the Jungian typology, and predictive validity was established. Slocum (1978) found clear differences in change agent strategies as a result of their cognitive styles. Cognitive style differences were based on the Jungian framework. Keen (1981) argued for the validity of the Jungian framework in a review of research based on the Myers-Briggs Type Indicator by pointing out supportive evidence for conceptual validity, construct validity, convergent validity, discriminant validity, predictive validity, and nomological validity.

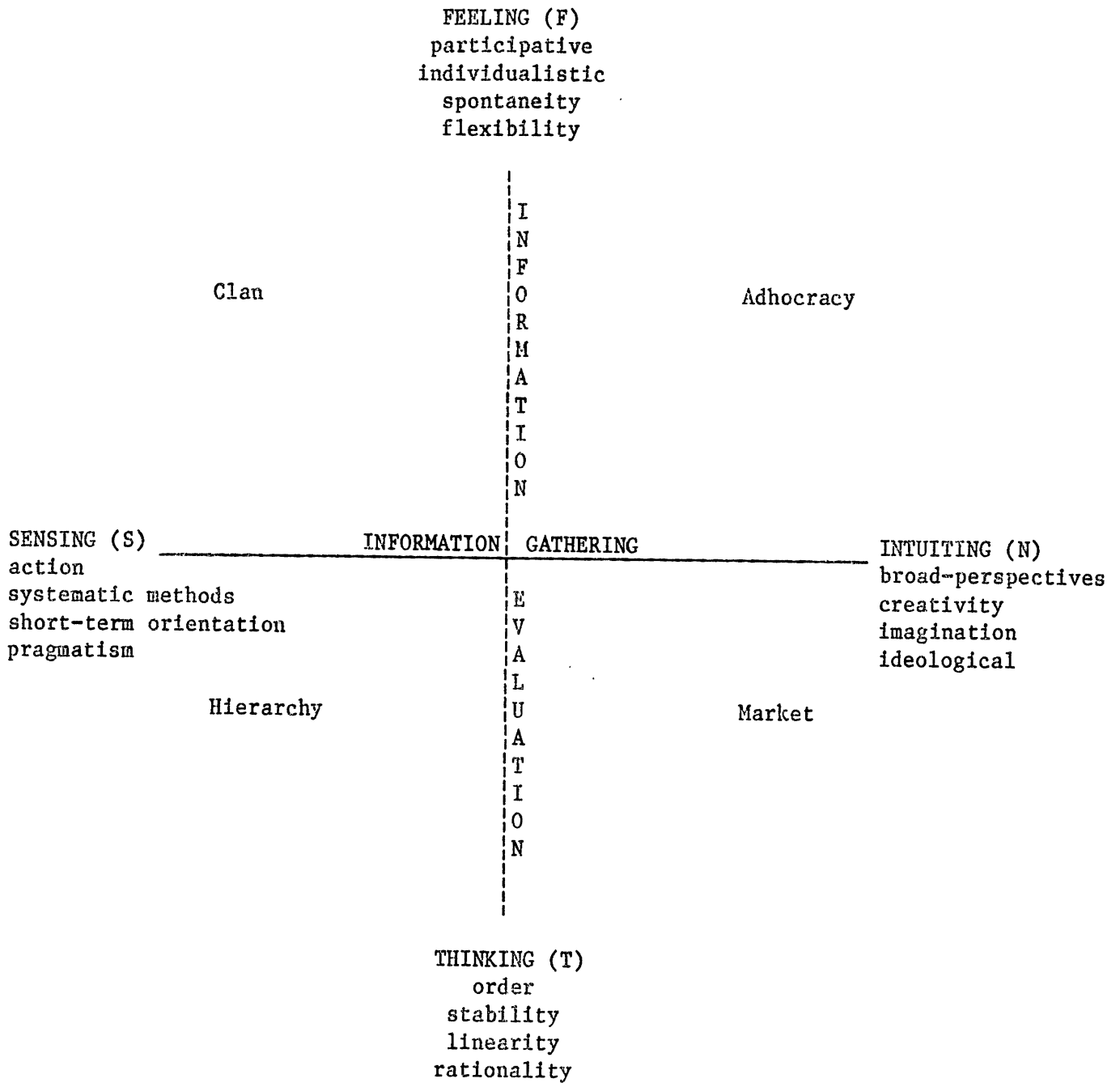
In sum, the Jungian framework appears to be among the best for organizing the shared underlying assumptions and interpretations (i.e., psychological archetypes) used by individuals that subsequently become manifest as organizational cultures. This is because the cultures that develop in organizations are influenced by the psychological archetypes held by organizational members. Mason and Mitroff (1973) and Mitroff and Kilmann (1976) found, for example, that organizations attract individuals who emphasize different psychological archetypes (based on the Jungian dimensions), and that cultures in organizations are described in a manner consistent with the Jungian typology. Because cultural information in organizations is interpreted by individuals in context of their underlying archetypes, the manner in which culture is experienced and transmitted also can be conceptualized on the basis of the Jungian dimensions. By so doing, four ideal types of cultures result. These four ideal types are described and interpreted quite differently, but predictably, by individuals who encounter them. Figure 1 outlines the four types in relation to the Jungian framework.

Figure 1 About Here

This framework categorizes cultural types on the basis of two dimensions: one dimension ranges from an emphasis on individualism, participation, interaction, spontaneity, and flexibility--labelled by Jung "feeling"--to an emphasis on order stability, linearity, and rationality--labelled "thinking" by Jung.¹ The other dimension ranges from an emphasis on broad perspectives, creativity, imagination, and ideology--labelled "intuiting" by Jung--to an emphasis on action, systematic methods, short-term orientation, and pragmatism--labelled "sensing." The four types of cultures that emerge from this framework are labelled clan, hierarchy, adhocracy, and market. (Mitroff

FIGURE 1

Jungian Dimensions and Four Ideal Types of Organizational Cultures



and Kilmann [1975, 1976] used the Jungian symbols to label the culture quadrants and called them simply ST, NF, SF, and NT type cultures.) The labels used here were selected because they are consistent with the descriptions of Williamson (1975), Ouchi (1980), Weber (1937), Mintzberg (1979), Wilkins and Ouchi (1983), and others, of the characteristics possessed by clan, hierarchy, market, and adhocracy type organizations. Specifically, the lower left quadrant (ST)--the hierarchy culture--emphasizes order, rules and regulations, clear lines of authority, uniformity, and efficiency. Transactions are under the control of surveillance, evaluation, and direction (Ouchi, 1980). The lower right quadrant (NT)--the market culture--emphasizes competitiveness, goal accomplishment and production, environmental interaction, and customer orientation. Transactions are governed by equitable exchange and market mechanisms (Ouchi, 1980). The upper left quadrant is the clan culture (SF) which emphasizes shared values and goals, participativeness, individuality, and a sense of family. Transactions are controlled by congruence of beliefs and objectives (Ouchi, 1980). The upper right quadrant is not identified by Ouchi as a major type of organization, but it clearly exists. Bennis (1973), Toffler (1980), Mintzberg (1979), Nystrom, Hedberg, and Starbuck (1976) use the term "adhocracy" to describe this type of culture. It emphasizes entrepreneurship, creativity, adaptability, and dynamism. Transactions are governed by flexibility and tolerance, development and growth, and a commitment to innovation (Mintzberg, 1979).

The relative placement of these four cultural types in the figure illustrates the relationship each holds to the others. Each culture possesses opposite characteristics from the diagonal culture in the figure but shares some characteristics with the two cultures in adjacent quadrants. For example, hierarchies are opposite from adhocracies in characteristics but share

some characteristics of internal orientation with clans and some characteristics of control and order with markets. Few organizations are likely to be characterized by only one culture since each culture in the model is an ideal or pure type. Most organizations will have attributes of more than one of the cultures, and paradoxical cultures often characterize organizations.

The usefulness of this typology for organizing cultural attributes lies in its ability to determine the extent to which cultures are congruent in their elements (i.e., the dominant attributes of the culture fall into the same quadrant) and are dominated by one quadrant more than others. Authors have hypothesized that strength of culture and congruence or fit among various elements of culture leads, at a minimum, to smooth functioning and an absence of conflict (Quinn and McGrath, 1984), and more often to high effectiveness and excellence (Peters and Waterman, 1982; Deal and Kennedy, 1982; Sathe, 1983). Theories of congruence have thus been espoused by several authors.

Cultural Congruence

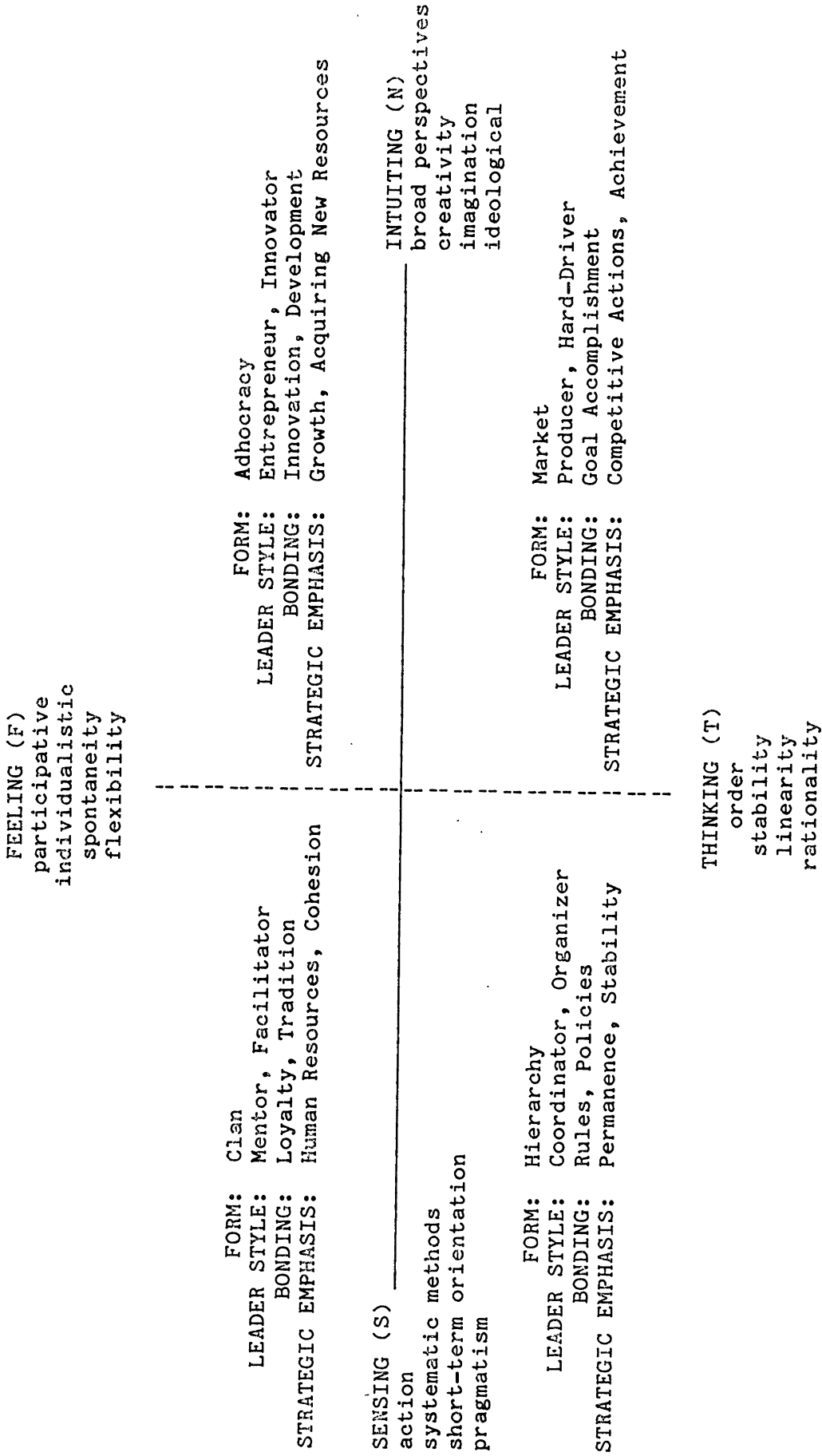
Figure 2 identifies characteristics of each cultural type that have appeared in the literature. Specifically, the work of Wilkins and Ouchi (1983), Quinn (1985), Quinn and Cameron (1983), Quinn and McGrath (1984), Smirich (1983), Deal and Kennedy (1982), Lundberg (1984), Sathe (1983), Mason and Mitroff (1973), and Mitroff and Kilmann (1975) was used to identify particular attributes of each culture that represented congruency or fit. The dominant type of leadership, the bases for bonding or coupling, and the strategic emphases present in the organization are among the important attributes that must be aligned with cultural type to produce cultural congruency, and they were selected for consideration in this study. More specifically, associated with each cultural type is a particular style of leadership that best reinforces and shares its values. The research of Mitroff and Kilmann

(1975, 1976) for example, found that certain types of managers are reinforced by and share the values of certain types of organizations. Quinn (1984) elaborated this fit between leader style and cultural type in a review of the leadership literature. In brief, he found that the coordinator, organizer, or administrator roles are most consistent with the characteristics of the hierarchy culture. This cultural type reinforces the style of leadership Mitroff and Kilmann called the ST leader and Quinn called an "empirical expert." The opposite style of leader, the entrepreneur, innovator, or risk taker (Mitroff and Kilmann's NF leader and Quinn's "idealistic prime mover") is most consistent with the adhocracy or emergent system form since the culture emphasizes change and growth. A leader style emphasizing decisiveness, production, and achievement best fits with the market form (Mitroff and Kilmann's NT leader or Quinn's "rational achiever"), whereas the clan reinforces a participative mentor, facilitator, or parent-figure style (Mitroff and Kilmann's SF leader, or Quinn's "existential team builder"). In each case, authors hypothesized that the appropriate leader style in each organizational type leads to a condition of minimum conflict and maximum efficiency. Congruent cultures are characterized by fit with leadership style. Incongruent cultures are characterized by lack of fit.

Figure 2 About Here

Other cultural characteristics enumerated in Figure 2 refer to the nature of bonding or coupling in each culture and the strategic emphases that characterize organizational action. Hierarchies are held together by formal rules and policies; adhocracies by a commitment to risk, innovation, and development; markets by an emphasis on task accomplishment, customer satisfaction, and marketplace competitiveness; and clans by loyalty and tradition.

FIGURE 2
A Model of Cultural Congruence for Organizations



Strategic emphases in hierarchies focus mainly on maintaining stability, predictability, and smooth operations; in adhocracies, mainly on prospecting, acquiring new resources, and growth; in markets, mainly on competitive actions and achievement; and in clans, mainly on human resource development and maintaining cohesion and morale (see Quinn and Cameron, 1983; Miles and Snow, 1978; Cameron and Whetten, 1983).

In sum, a basic assumption of many authors has been that congruency among these major elements of organizational culture is associated with effective performance, and that strength in these cultural types also has a positive relationship with effectiveness. A major purpose of this study is to investigate this relationship between congruence and organizational effectiveness and between strength and organizational effectiveness. That is, the two research questions guiding this study are: Are organizations with congruent cultures more effective than those with incongruent cultures? Is a "strong" culture more effective than a "weak" culture? The approach used to investigate these questions is explained in the next section.

Methodology

Culture is often difficult to identify because, without being challenged, shared assumptions and interpretations go unnoticed. Many researchers have tried to assess culture by observing patterns of behavior, listening to organizational stories and myths, or conducting indepth interviews (see Wilkins, 1983). The main drawback of these methodologies is that the number of organizations that can be included in an investigation is extremely limited. Time and expense constrain the sample size. On the other hand, as one includes more organizations in an assessment of culture, one gives up depth and richness in favor of breadth. The investigation of an assumption of cultural congruence demands an examination of more than a single case study

inasmuch as the hypothesized relationship is a generalized one, not limited to just one type of organization. It was decided in this study, therefore, to try to assess a large number of organizations, and to err on the side of breadth rather than depth.

A key ingredient in identifying the culture of an organization is to provide a stimulus to organization members so that they are encouraged to make an interpretation of their organization's culture. That is, organization members need to be stimulated to explicate the underlying assumptions and viewpoints that permeate the organization, whether by telling stories, answering probing interview questions, or responding to scenarios on a questionnaire. This study used similarity ratings of scenarios on a questionnaire with 3,406 individuals in 334 organizations. In-depth analyses of culture were sacrificed in favor of descriptions of cultural attributes in a large sample of organizations.

Sample

Three hundred thirty-four colleges and universities in the United States were selected for inclusion in this study based on three control variables: enrollment size (between 200 and 20,000 full-time equivalent students), institutional control (public or private), and the presence of graduate programs (bachelors, masters, and doctorate). These control variables were selected because they have been used in the past as the basis for classifying different types of institutions (see Carnegie Commission on Higher Education, 1976; Huff and Chandler, 1970; Makowski and Wulfsberg, 1982). The sample of 334 is representative of the entire population of four-year higher education institutions in America relative to the three control variables. Public institutions constituted 30 percent of the sample (N=127), private schools were 62 percent (N=207). Using the NCHEMS classification system (Makowski and

Wulfsberg, 1982), twenty-nine (9 percent) of the schools are major doctoral, 127 (38 percent) are comprehensive schools, 157 (47 percent) are four-year liberal arts, and 21 (6 percent) are specialized schools (i.e., business, health, or military). One hundred eighty schools (54 percent) were classified as small (200 to 2,500 FTE), 120 (36 percent) were medium in size (2,500 to 10,000 FTE), and 34 (10 percent) were large (10,000 to 20,000 FTE).

At each of the 334 schools, individuals were identified that could provide an overall institutional perspective, that is, who had a view of the overall institution's culture, not just a small subunit. These respondents constitute the internal dominant coalition for each institution and consist of presidents; chief academic, finance, student affairs, external affairs, and institutional research officers; selected faculty department heads; and selected members of the board of trustees. The number of respondents contacted at each institution ranged from 12 to 20 (approximately six administrators, six faculty department heads, and six trustees). In all, 3,406 individuals participated in the study (55 percent of the total receiving a questionnaire)--1,317 administrators (39 percent of the sample), 1,162 faculty department heads (34 percent of the sample), and 927 trustees (27 percent of the sample).

Assessing Culture and Other Variables

A questionnaire was constructed and mailed to each respondent. Anonymity was promised to both respondents and institutions, so no names are used in this paper. All questions focused at the organization level of analysis and asked respondents to rate the extent to which certain characteristics were present at their school as well as the extent to which certain cultures were dominant. Specifically, questions assessed organizational effectiveness on nine dimensions; various structural, strategic, decision making, and environmental dimensions; and the four components of culture listed in Figure 2.²

Brief scenarios were constructed that described the dominant characteristics of each of the four cultural types. The four types were all present as alternatives in each question. Respondents divided 100 points among the four alternatives in the question depending on how similar they thought their own organization was to the scenario. This gave them the opportunity to indicate both the type of culture(s) that characterized the organization as well as the strength of the culture (i.e., the more points given, the stronger, or more dominant, the cultural type). The rationale for this type of question is that underlying assumptions about organizational culture were more likely to emerge from questions that asked respondents to react to already-constructed organizational descriptions than to ask respondents to generate the descriptions themselves. The questions were intended to serve essentially as mirrors, where respondents rated their familiarity with each different reflection. One question assessed the general cultural characteristics, a second assessed leader style, a third assessed institutional bonding or coupling, and a fourth assessed strategic emphases. When respondents gave the highest number of points to cultural attributes representing the same quadrant of Figure 2, the culture was labelled congruent. For example, if a respondent gave the most points to the scenario indicating a clan type culture, identified the leader as a facilitator or mentor, indicated that bonding occurred on the basis of loyalty, and that strategic emphases focus on human resources, all upper left quadrant attributes, then the organization was identified as having a congruent culture. On the other hand, it was also possible to identify incongruent cultures if the highest number of points represented a different quadrant for each of the four cultural attributes (e.g., a clan [upper left] was led by an entrepreneur [upper right], bonded together by formal rules [lower left], and strategically emphasized

competitive actions [lower right]). Different amounts of congruence were represented by having two or three of the quadrants receive the highest number of points, so that a continuum of congruence could be derived from the instrument ranging from complete incongruence (a different quadrant was dominant in each question) to complete congruence of the culture (the same quadrant was dominant in each of the four questions).

In addition, it was possible to determine the strength of the culture based on the number of points given to the attributes. When respondents gave, say, 70 points to an attribute rather than, say, 40 points, that attribute was considered to be stronger, or more dominant, in the culture. Type of culture was also determined in the questions by examining organizations with congruent cultures and determining which of the four types of cultures was dominant (based on Figure 2). A clan culture was indicated by congruence among the four attributes in the upper left quadrant (i.e., a personal place, like a family; led by a mentor, facilitator or parent-figure; bonded together by loyalty and tradition; emphasizing human resources). An adhocracy was indicated by congruence among the four attributes in the upper right quadrant (i.e., a dynamic, entrepreneurial place; led by an entrepreneur or innovator; held together by a commitment to innovation and development; emphasizing growth and acquiring new resources). A hierarchy was indicated by congruence in the lower left hand quadrant (i.e., a formalized, structured place; led by a coordinator or organizer; held together by formal rules and policies; emphasizing permanence and stability). A market was indicated by congruence in the lower right quadrant (i.e., a production oriented place; led by a hard driver or producer; held together by an emphasis on task and goal accomplishment; emphasizing competitive actions and achievement).

Analyses

Data analysis focused first on identifying which institutions possessed congruent cultures, the strength of the cultures, and the types of cultures present in the organizations. This was done by averaging the points given by respondents to each attribute in each institution. An organization score was produced for each attribute in each type of culture (e.g., a leader style score was produced for each of the four cultural types). Analysis of variance was then used to compare the organizational effectiveness of congruent and incongruent cultures, strong and weak cultures, and the different types of cultures on the basis of institutional mean scores. Other organizational characteristics such as structure and strategy also were compared among the various groups using ANOVA. Finally, discriminant analyses were conducted to determine on what organizational characteristics the various institution groups differed from one another. The results of these analyses are presented in the following section.

Results

Identification of Cultures

Table 1 presents a summary of the descriptive data analyses. No institution was characterized totally by only one culture (i.e., none gave all 100 points to an attribute), but dominant cultures were clearly evident in some of the schools. For example, 47 institutions (14 percent) were classified as having congruent cultures, with 11 more added (3 percent) if tie scores were included. (That is, 11 organizations gave equal points to at least two different quadrants, one of which was the congruent quadrant.) Thirty-two organizations (10 percent) had completely incongruent cultures. The largest number of organizations had congruence in three of the quadrants (124 or 37 percent) with 55 more added (16 percent) if those with one tie were

included. Sixty-six organizations (20 percent) were congruent in only two of the quadrants.

Table 1 About Here

In comparisons of congruent and incongruent cultures, the 47 completely congruent organizations (no ties) were used along with the 32 organizations with completely incongruent cultures. Organizations with mixed congruence were not used in those comparisons.

In identifying the distribution of the different types of congruent cultures present in the sample, clans were the most numerous type. Twenty-five of the organizations were clans (7 percent of the total sample), 9 were adhocracies (3 percent), 12 were hierarchies (4 percent), and only 1 was a market. Strong culture was defined by at least 50 points being given to a particular attribute. If an organization was a congruent clan, for example, and all the clan attributes received at least 50 points, it was classified as a strong culture. Twenty-eight of the congruent organizations (57 percent) had strong cultures--21 were clans, 4 were adhocracies, and 3 were hierarchies.

Comparisons Among Cultures

In order to investigate the proposed congruence hypothesis (i.e., that congruent cultures are more effective than incongruent cultures), it was necessary to assess the organizational effectiveness of the institutions in the study. This was done using the nine dimensions of effectiveness developed by Cameron (1978, 1981, 1984) which have been found to be both valid and reliable indicators of effectiveness in colleges and universities. Long-term viability as well as current levels of high performance are strongly associated with scores on those dimensions of effectiveness (see footnote 1 and

TABLE 1

Description of the cultures of 334 colleges and universities

Number of Congruent Quadrants	Number of Organizations		
4	47		
4 with ties	11		
3	124		
3 with ties	55		
2	66		
1	32		

Type of Culture	Congruent	Incongruent	Strong Culture
Clan	25		21
Adhocracy	9		4
Hierarchy	12		3
Market	1		0
TOTAL	47	32	27

Cameron, 1984). It was important to assess multiple dimensions of effectiveness in order to fully investigate the research questions (as is explained below), so these dimensions were used rather than a single objective number of some type.

Mean scores on each of the effectiveness dimensions were computed for each institution, and comparisons were made between congruent and incongruent cultures using analysis of variance. Figure 3 illustrates the results. No significant differences were found between the means of organizations possessing a congruent culture and those possessing an incongruent culture on any dimension of effectiveness. Therefore, the hypothesized relationship between effectiveness and congruence of culture proposed by various authors was not supported in these organizations.

Figure 3 About Here

Using five different levels of congruence provides a more fine-grained comparison, but ANOVA again resulted in nonsupport of the congruence hypothesis. Figure 4 plots the mean effectiveness scores for institutions possessing five levels of cultural congruence, ranging from high congruence (4 congruent quadrants) to very low congruence (no congruent quadrants). Only on dimension 4 (Student personal development) does a significant difference appear, but it is the moderately high congruent institutions (three congruent quadrants including ties) that scored significantly higher than the incongruent (very low) organizations ($p \leq .05$). Institutions with highly congruent cultures scored the same as those with low congruence, so the congruence model also is not supported with these more refined comparisons.

Figure 4 About Here

FIGURE 3 A comparison of congruent and incongruent cultures

Analysis of "Culture" Data (Congruence)

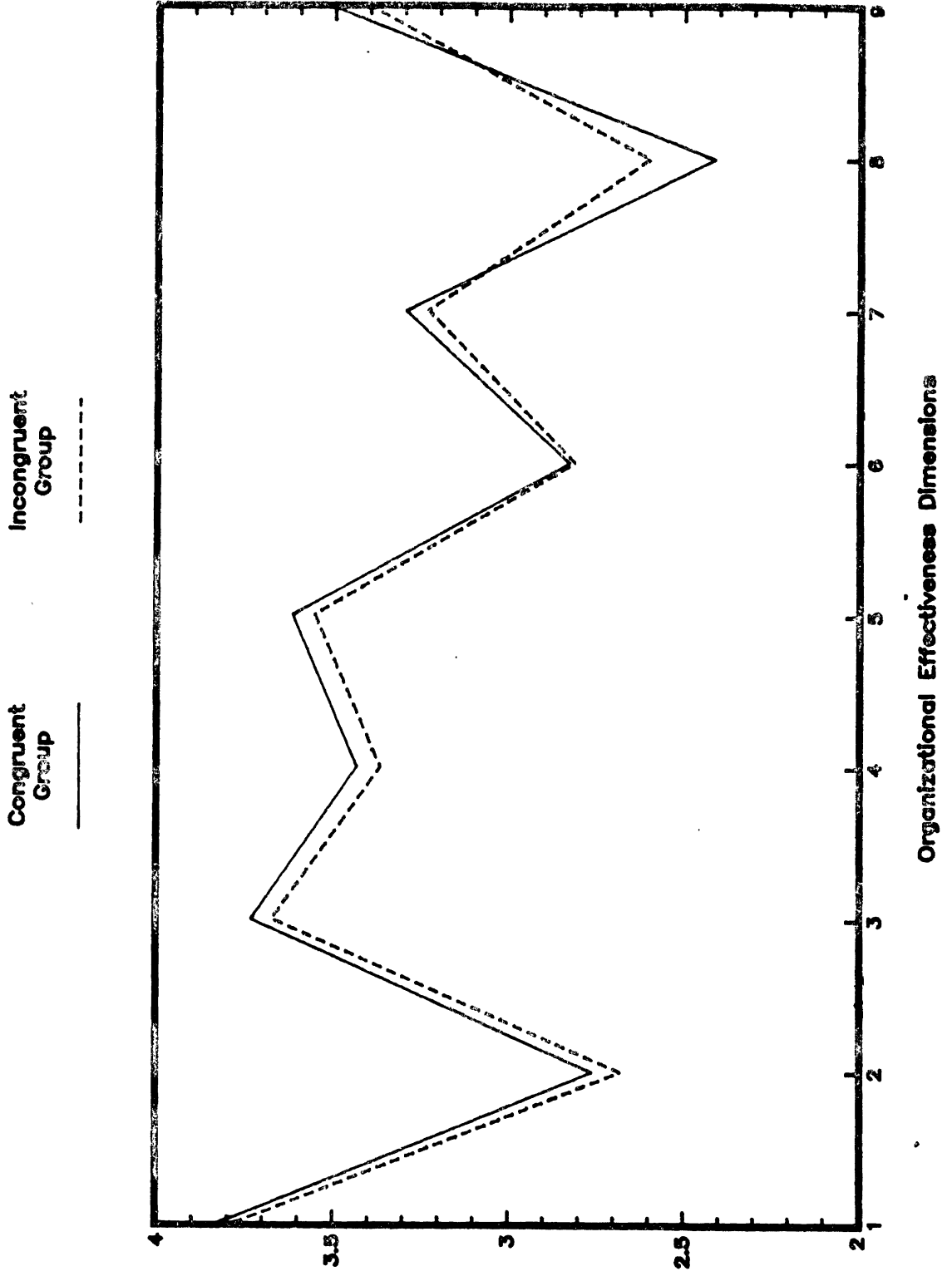
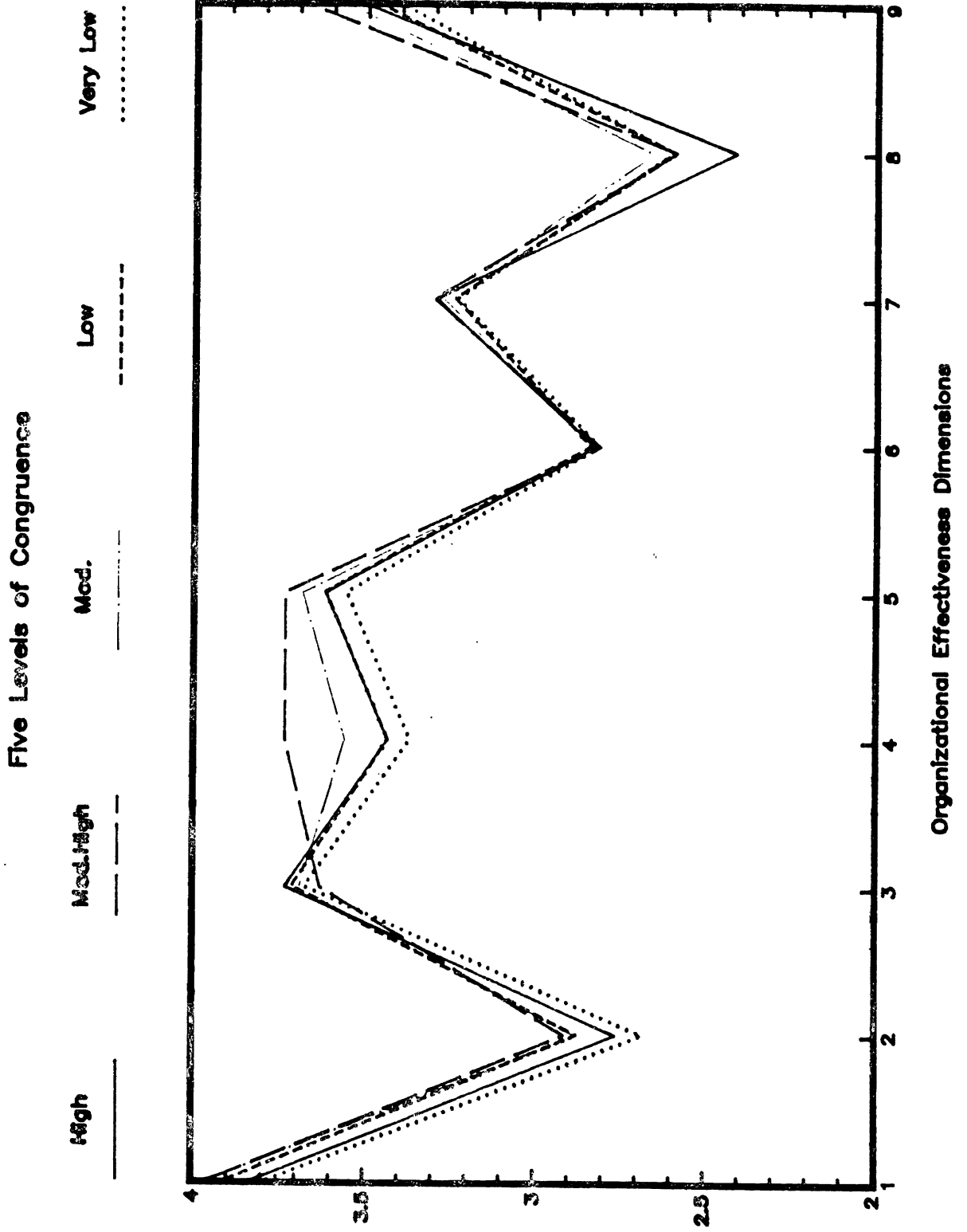


FIGURE 4 A comparison of five levels of cultural congruence

Analysis of "Culture" Data (Congruence)



Since some authors have argued that cultural "strength" is a more powerful attribute of organizational culture than congruence, comparisons also were made between "strong" and "weak" cultures. As shown in Figure 5, however, no significant differences exist between institutions with strong cultures (i.e., 50 or more points given to congruent attributes) and those with weak cultures. However, aggregating across cultural types as in Figure 5 may mask important differences between weak and strong cultures, so comparisons were also made after breaking out each type of culture separately. These comparisons resulted in mixed findings.

Figure 5 About Here

Figure 6 plots the mean scores of the strong clan, adhocracy, and hierarchy cultures on the organizational effectiveness dimensions along with the incongruent weak cultures. (No strong market culture existed.) Analysis of variance revealed that significant differences exist among the means of the groups on four dimensions of effectiveness. Strong clan cultures scored significantly higher ($p \leq .05$) than incongruent weak cultures on three of the nine dimensions, but strength was not a factor in comparing the other two cultural types to weak cultures. Strong clan cultures were more effective than incongruent weak cultures on (4) Student personal development, (5) Faculty and administrator employment satisfaction, and (9) Organizational health, but the same was not true for strong adhocracy cultures (i.e., no significant differences existed in pairwise contrasts). Moreover, strong hierarchy cultures scored lower than the other groups on every dimension except one. It appears, from this preliminary comparison, therefore, that the observed differences in effectiveness may be due to the type of the culture present (i.e., clan) as opposed to the strength of the culture.

FIGURE 5 Comparisons between strong cultures and weak cultures

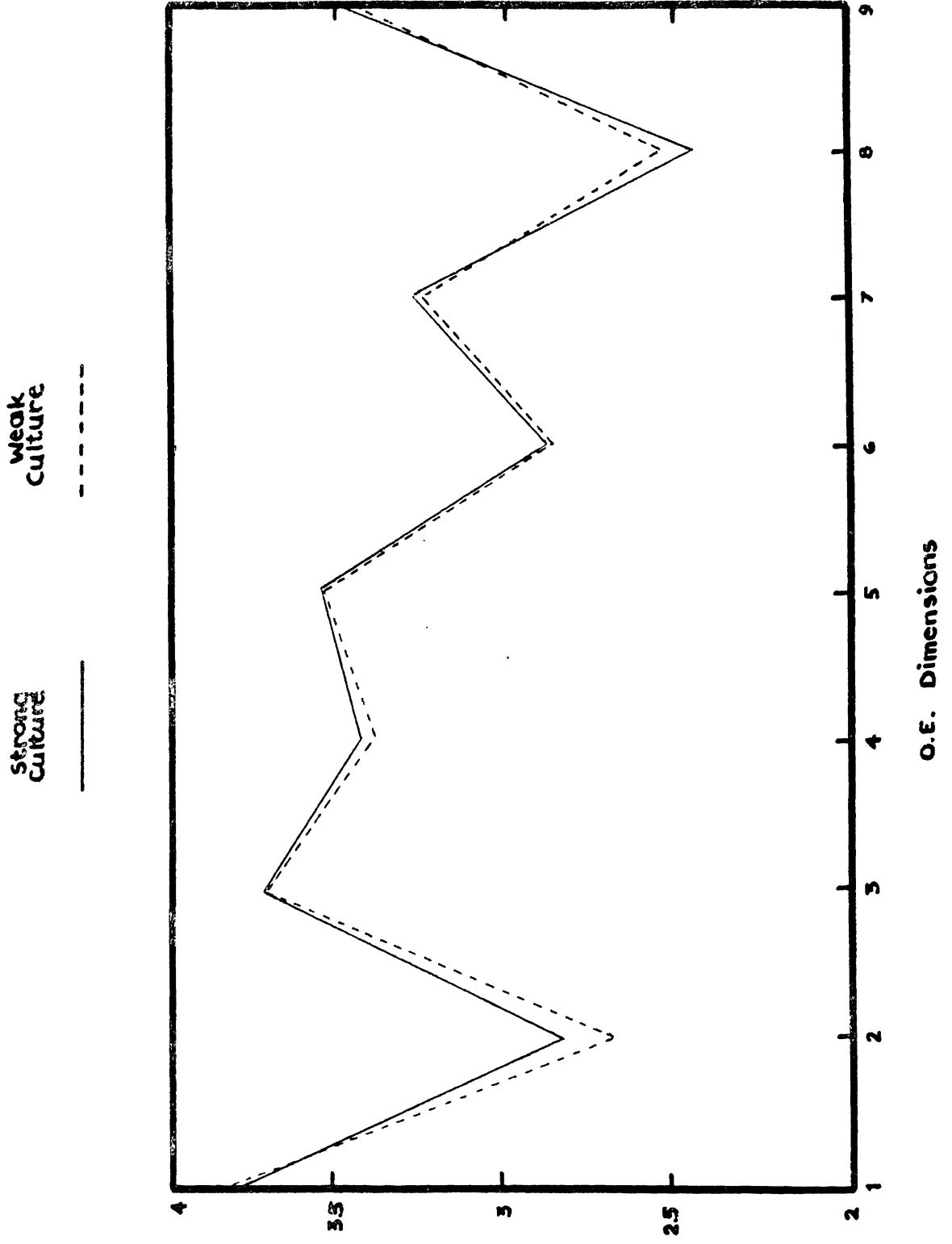


Figure 6 About Here

To investigate this proposition--that type is a more important attribute of culture than strength--comparisons were made among the four types of cultures--clan, adhocracy, hierarchy, market--along with the incongruent culture on the nine dimensions of effectiveness. Figure 7 presents a plot of the mean effectiveness scores for the five groups. (Note that institutions classified as one of the four types of cultures all had congruent cultures but not necessarily strong cultures.)

Figure 7 About Here

Analysis of variance revealed significant differences among the groups' mean effectiveness scores on five of the nine dimensions. Clan cultures scored highest on four of the dimensions, adhocracy cultures scored highest on four of the nine dimensions, and the market culture scored highest on the remaining dimension. On no dimension did the incongruent group score lowest. At least one congruent culture group scored lowest on each of the effectiveness dimensions.

Post hoc pairwise contrasts revealed that clans scored significantly higher on dimension 4 (Student personal development) than the other three congruent cultures but not the incongruent culture. On dimension 5 (Faculty and administrator employment satisfaction) clans scored significantly higher than hierarchies but not the incongruent group. Clans and adhocracies scored significantly higher than hierarchies and markets on dimension 7 (System openness and community interaction) but not the incongruent group. And on dimension 8 (Ability to acquire resources) markets and incongruent cultures scored significantly higher than hierarchies. On dimension 9 (Organizational health) clans scored significantly higher than all groups except adhocracies.

FIGURE 6 Comparisons between three types of strong cultures and weak culture

Nine O.E. Dimensions by Culture Groups

Incongruent Weak Culture Strong Clan Culture Strong Adhocracy Culture Strong Hierarchy Culture

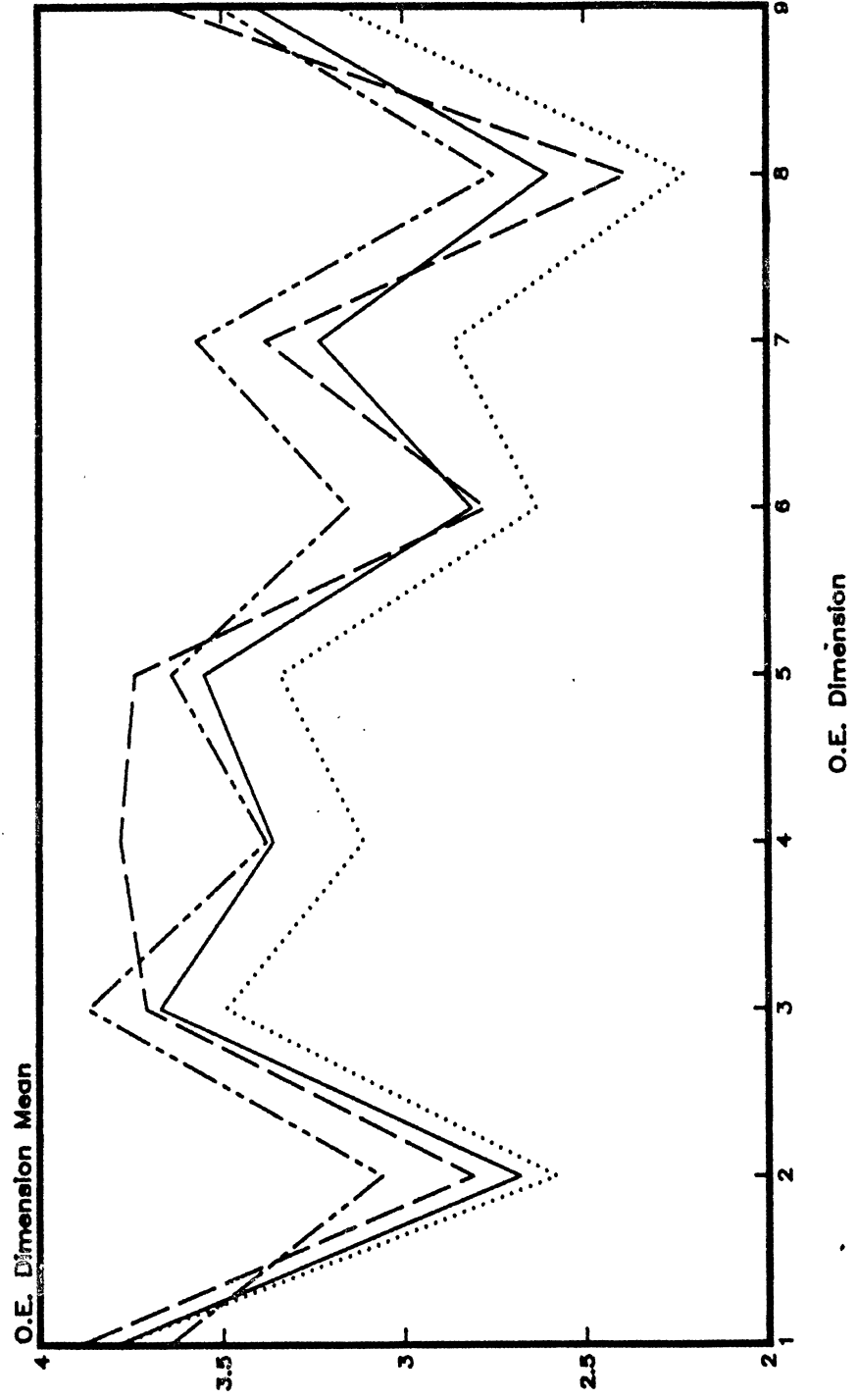
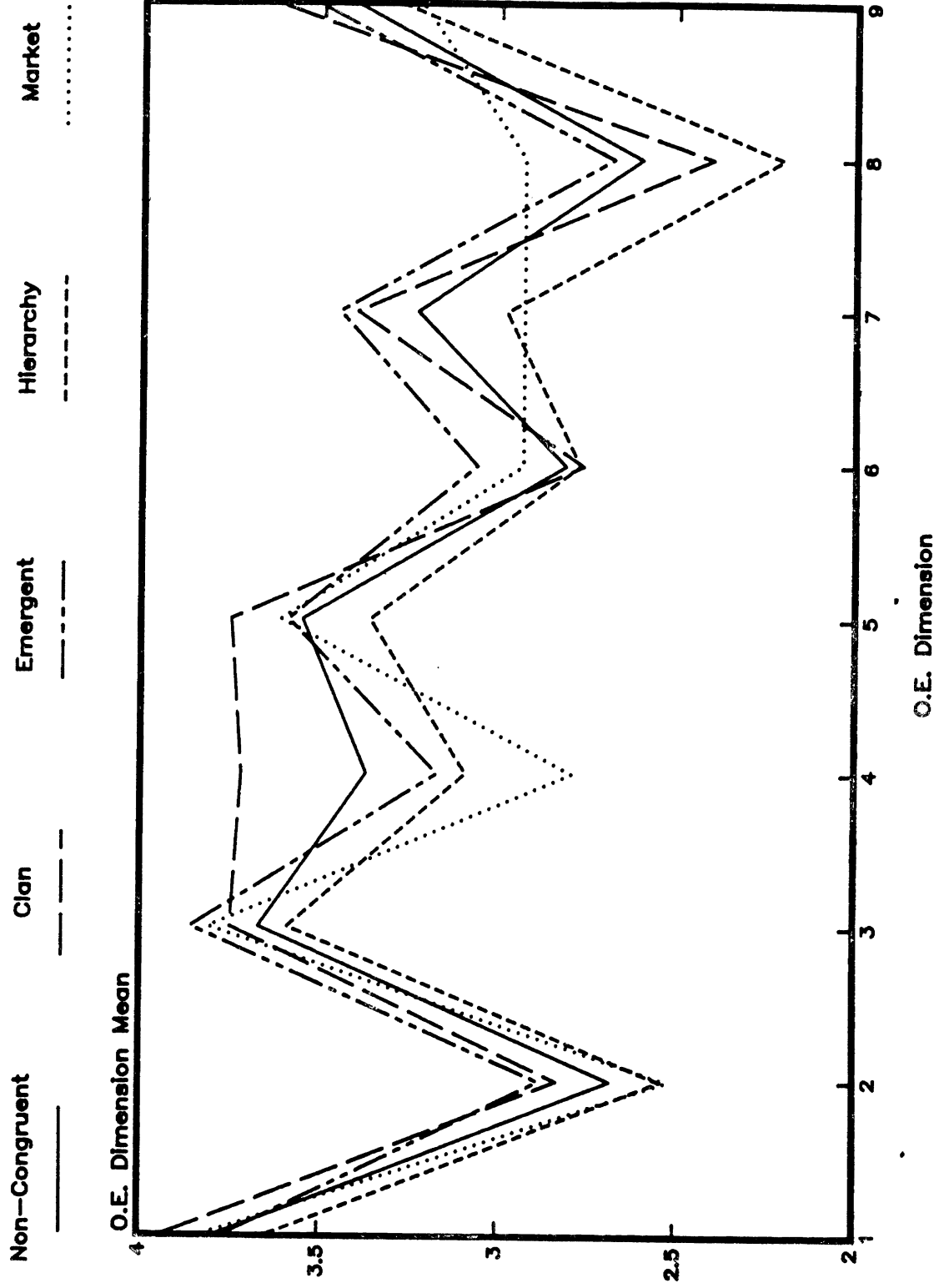


FIGURE 7 Comparisons among four types of cultures and incongruent culture

Four Cultures & Incongruent Group on Nine O.E. Dimensions



What these results point out is that cultural congruence and cultural strength do not predict higher effectiveness in organizations. Rather, the type of culture present has a much stronger association with effectiveness on certain dimensions than the other two attributes of culture. In fact, the most interesting finding in these ANOVAS is the discovery of a consistency between the dimensions of effectiveness on which the various cultures scored highest and their primary attributes. An explanation of this observation follows.

Past research has found that the nine dimensions of effectiveness used in this study are associated with three major domains of activity in colleges and universities (see Cameron, 1981). Table 2 gives the domains with which each effectiveness dimension is associated and matches each dimension and domain with the culture that scored highest.

Table 2 About Here

The table reveals that clans scored highest on the four dimensions associated with the morale domain in colleges and universities. This is consistent with the attributes of the clan culture, with its emphasis on human resources, consensus, and cohesion. The adhocracy culture, with its emphasis on innovation, creativity, and entrepreneurship, scored highest on the two dimensions comprising the external adaptation domain (i.e., flexibility and adaptability seem to be a strong attribute of adhocracies, so they may be expected to be especially effective in the external adaptation domain), and on two dimensions comprising the academic domain. That is, institutions with adhocracy cultures scored higher than other types of cultures on Student academic development and on Professional development and quality of the faculty. These two dimensions also are consistent with the emphases present

TABLE 2

A Summary of Which Culture Scored Highest on Which
Dimension of Organizational Effectiveness

Dimension of Effectiveness	Domain (Cameron, 1981)	Culture Scoring Highest*
1. Student educational satisfaction	Morale	Clan
2. Student academic development	Academic	Adhocracy
3. Student career development	External Adaptation	Adhocracy
4. Student personal development	Morale	Clan
5. Faculty and administrator employment satisfaction	Morale	Clan
6. Professional development and quality of the faculty	Academic	Adhocracy
7. System openness and community interaction	External Adaptation	Adhocracy
8. Ability to acquire resources	Academic	Market
9. Organizational health	Morale	Clan

* The highest scoring culture was significantly higher ($p \leq .05$) than at least one other culture on each dimension of effectiveness.

in an adhocracy--freedom and individual discretion, creativity, growth, and development--all of which form the core of the values of scholarship and academics. The market culture scored highest on the Ability to acquire resources, which, again is consistent with the orientation of market organizations. With an emphasis on competitive actions and achievements, and an orientation toward external (rather than internal) resources, it is not surprising that the market culture was most effective in acquiring resources from the environment. (Adhocracies scored next highest, also consistent with expectations.)

These analyses reveal, then, that the effectiveness of institutions is more closely associated with the type of culture present than with congruence or strength of that culture. The major attributes and emphases of a culture tend to be associated with high effectiveness in comparable domains (i.e., clans are more highly effective in human resource areas than are hierarchies). While this is not surprising, it is, nevertheless, inconsistent with propositions in the culture literature up to now (e.g., Deal and Kennedy, 1982).

Discriminating Among Cultures

Because type of culture appears to be a more influential attribute than congruence or strength in predicting institutional performance, analyses were conducted to determine what other organizational and environmental attributes are associated with cultural type. The intent was to identify factors that are strongly associated with the four types of cultures so that guidelines might be developed to help managers perpetuate or encourage such cultural development. Wilkins and Ouchi (1983), for example, suggested that the efficiency of market, hierarchy and clan cultures differ on the basis of environmental turbulence and complexity. By implication, other environmental attributes (or particular organizational attributes) may also be associated

with effective clan, market, hierarchy, and adhocracy cultures in this study. Discriminant analyses were performed first between institutions with congruent cultures versus those with incongruent cultures. Then discriminations were made among the four types of cultures. Because degrees of freedom limitations prohibited including all variables in a single analysis, separate step-wise discriminations were run for the environmental variables, the structure and process variables, the decision making variables, and the effectiveness dimensions (see footnote 1). The most powerful discriminators from each of those groups of variables were then combined into a final discriminant run, making the resulting discriminating variables the most powerful in separating the groups.

Table 3 presents the results of the discriminant analysis between the institutions with congruent cultures and those with incongruent cultures. Consistent with results reported above, major differences do not exist between congruent and incongruent groups. Seven variables significantly discriminate between the groups, but the discriminant functions are not easily interpreted. Institutions with congruent cultures are characterized by a lack of long-term planning, high leader credibility, and decision making that is both bureaucratic and political.

Table 3 About Here

These characteristics are somewhat paradoxical in that leaders are highly respected and have high credibility with institution members, but at the same time the decision making process relies on coalitions, power, and formalized rules. Political and bureaucratic decision making is generally required when leadership is neither strong nor respected, yet the two exist simultaneously in organizations with congruent cultures.

TABLE 3

Most Powerful Discriminators Between
the Congruent and the Incongruent Groups

Eigenvalue	Canonical Correlation	Wilks' Lambda	Chi Square	D.F.	Significance
.869	.682	.535	44.702	11	.0000

Variables	Discriminant Coefficients	Correlation With Discriminant Score
Neglected long-term planning	-.282	-.223**
High leader credibility	-.642	-.230**
Boundary spanning activity	.470	.377***
Bureaucratic decision making	-.621	-.261**
Rational decision making	.715	-.098
Organized anarchy decision making	-.628	-.087
Bureaucratic decision making (b)	.533	.071
Autocratic decision making	.515	.460***
Political decision making	-.343	-.259**
Student Academic Development	-.642	-.129
Ability to Acquire Resources	1.056	.317***

Groups	Centroid	Percent Correctly Classified
Incongruent cultures	1.115	84.8
Congruent cultures	-.759	

* p < .05
 ** p < .01
 *** p < .001

Institutions with incongruent cultures are characterized by autocratic decision making, an increase in boundary spanning activities, and effectiveness in acquiring needed resources. A paradox also is present in these characteristics. While institutions with incongruent cultures are expanding in linkages with external constituencies, they also are maintaining a tight lock on internal decision making. There seems to be both expansion and contraction at the same time. In general, the discriminant functions are difficult to interpret for these two groups, but that is consistent with the observation made above that congruent and incongruent cultures do not perform in significantly different ways. The differences between the two groups based on organizational attributes are not intuitively obvious nor easily explained.

On the other hand, discriminant analysis conducted on the four different types of cultures--clans, adhocracies, hierarchies, and markets--uncovered differences that are more marked and more interpretable. Table 4 summarizes the results of three significant discriminant functions each of which is statistically independent of the other two functions. Note that 100 percent of the institutions can be correctly classified in the appropriate culture by knowing their scores on the organizational attributes, indicating that the variables are very powerful discriminators, and the cultures are quite different from one another in their characteristics.

Table 4 About Here

The first discriminant function separates the top two cultures (clans and adhocracies) from the bottom two cultures (hierarchies and markets). That is, the function discriminates on the horizontal axis of the Jungian dimensions in Figure 2. Clans and adhocracies are characterized by a strong saga, innovation, high morale, proactivity in strategies, boundary spanning activities,

TABLE 4 The Most Powerful Discriminators Among the Four Organizational Cultures

Function	Eigenvalue	Canonical		Wilks'		Chi		D.F.	Significance
		Correlation	Lambda	Square	Square				
1	8.999	.949	.013	157.760	45	.0000			
2	2.994	.866	.133	73.717	28	.0000			
3	.887	.686	.530	23.174	13	.0396			

Variables	I			II			III		
	A	B		A	B		A	B	
Distinctive purpose (Saga)	.754	.524***		-.558	-.012		-.148	-.171	
Mission agreement (saga)	.057	.449***		.930	.337**		.274	-.124	
Increasing innovation	-.413	.438***		-.840	-.447**		-.686	.080	
Increasing Morale	.101	.349**		.289	-.037		.735	.204	
Absence of slack	-.386	-.437***		.205	.156		.316	.135	
High leader credibility	-.911	.210		-.592	-.193		-1.208	-.291*	
Increasing boundary spanning	.524	.586***		.027	-.169		.305	.111	
Prospector strategy	.377	.370**		-.304	-.619***		.942	.590***	
Increasing administrator quality	.716	.552***		.187	-.074		-.306	.061	
Emphasizing revenue initiatives	.364	.414***		-.455	-.459***		-.155	-.054	
Anarchy (Decision style)	1.533	.150		.178	.012		-.343	-.171	
Collegial (Decision style)	.374	.385***		.548	.302**		-.136	.008	
Rational (Decision style)	1.474	.365**		.406	.064		.192	.063	
Student personal development	.222	.391***		.388	.456***		.086	-.258*	
System Openness	.667	.490***		.022	-.031		.010	.031	

Group	Centroid			Percent Correctly Classified
	1	2	3	
Clan Culture	1.617	.949	-.435	
Adhocracy Culture	2.179	-2.565	1.004	100
Hierarchy Culture	-4.513	.499	.534	
Market Culture	-5.873	-6.636	-4.569	

A = Discriminant coefficient B = Correlation with the discriminant score * p<.05 ** p<.01 *** p<.001

collegial decision making, high quality leaders, and effectiveness in student personal development and system openness. In brief, these cultures are characterized by a strong sense of mission--like a family, with high cohesion and personalness. They also are proactive and expansive in their strategies. Hierarchies and markets, in contrast, are characterized by a lack of slack resources, that is by tightness and efficiency. In general, this discriminant function separates organic-type institutions from mechanistic-type institutions. Organic schools are likely to have clan cultures or adhocracy cultures, and mechanistic schools are likely to have hierarchy cultures or market cultures. (This is consistent with the description of the different quadrants in Figure 2.)

The second discriminant function separates the cultures along the vertical axis of Figure 2. Clans and hierarchies are separated from adhocracies and markets. Clans and hierarchies are characterized by strong institutional saga and collegiality in decision making. Adhocracies and markets are characterized by proactivity and initiative in their strategies. The division is essentially between institutions emphasizing their own core mission and a status quo orientation (clans and hierarchies), and institutions emphasizing growth and innovation (adhocracies and markets). (This also is consistent with the description of the different quadrants in Figure 2.)

The third discriminant function separates clans and markets from adhocracies and hierarchies. According to the configuration in Figure 2, these groupings put opposite cultures together (that is, clans and markets are opposites, and adhocracies and hierarchies are opposites in terms of their emphases on the two dimensions in Figure 2). As is predictable, the discriminant function is a weak one and contains only three significant variables. Clans and markets are characterized by high leader credibility, and

adhocracies and hierarchies are characterized by a prospector strategy and effectiveness in student personal development. The fact that these cultures are opposites explains the difficulty in separating the groups from one another. The prospector strategy is clearly consistent with the adhocracy culture, but it is difficult to find important variables that group these opposite cultures together.

In summary, this discriminant analysis of the four types of cultures shows that each cultural type has certain organizational characteristics that are consistent with the model shown in Figure 2. Clans are characterized by high cohesion, collegiality in decision making, and saga. Adhocracies are characterized by innovation and aggressive strategies, increasing boundary spanning, and initiative. Hierarchies are characterized by absence of slack (tight fiscal control) and leader credibility. Markets are characterized by aggressiveness and prospector strategies. In addition, the characteristics that the different cultures share in common with one another are also consistent with the discriminant results. Figure 2 points out that clans and adhocracies share an emphasis on flexibility, while hierarchies and markets share an emphasis on control. The discriminators in the first function are consistent with those emphases. Similarly, clans and hierarchies share an emphasis on internal factors, while adhocracies and markets share an emphasis on external factors. The results of the second discriminant function also are consistent with those commonalities. Hence, the discriminant analysis both confirms the relationships portrayed in Figure 2 as well as provides some potential guidelines for managers of institutional culture. These guidelines are suggested in the section that follows.

Before moving to that section, however, it is also important to point out at least one factor that did not enter the discriminant function and did not

have an important relationship with any cultural type. In particular, no environmental attribute or dimension was associated uniquely with any of the four cultures. No environmental condition fostered the development and perpetuation of any one cultural type more than others. This is contrary to the hypothesis of Williams and Ouchi (1983) that clans are a higher performing (efficient) culture in turbulent environments than markets or hierarchies. In these organizations, no such relationship emerges.

Summary and Conclusions

This study set out to investigate the relationship between cultural congruence and strength and the effectiveness of organizations. Past literature is filled with propositions that strength and congruence of culture are associated with high levels of effectiveness. Formal models of cultural congruence or "fit" have been proposed for organizations, and, as a result of some recent best-selling management books, it is fashionable to speak with pride about an organization's "strong" culture, equating it with excellence.

Institutions of higher education with highly congruent cultures were compared in this study to those with highly incongruent cultures on nine dimensions of organizational effectiveness. No significant differences were found on any of the dimensions. Moreover, when comparing these two groups of institutions on the basis of other organizational characteristics such as structure, strategy, decision processes, and demographic factors using analysis of variance (not reported above), significant differences exist on only two variables: centralization and boundary spanning activities. Congruent institutions are lower on both variables. What is noteworthy, however, is that no differences exist on the other structural dimensions, institutional strategies, decision making processes, characteristics of leaders, demographic factors such as size, control, or age, and attributes of the external

environment. This gives support to the claim in this study that it is culture (i.e., underlying assumptions and interpretations), not more obvious organizational attributes, that is being assessed, and that congruency of culture is not the distinguishing attribute that researchers should be concerned about.

Measuring strength of culture also did not explain the relationship between culture and effectiveness (no significant differences exist between strong cultures and weak cultures relative to effectiveness), nor were significant differences present between institutions with strong cultures and those with weak cultures on other organizational characteristics such as structure, strategy, environment, and demographics. (These latter analyses also were not reported above.) The common assumptions about congruence and strength of culture leading to high performance were simply not confirmed.

The study does point out, however, an important, but frequently neglected, attribute of culture that has a relationship with effectiveness--cultural type. A typology of organizational cultures was described, based on the Jungian dimensions, which consists of four forms--clan, adhocracy, hierarchy, and market. It was discovered that all institutions possessed attributes of several of these cultures (no institution was characterized by only one cultural type), but several of the institutions had a clearly dominant culture. Of these organizations, clans turned out to be the most frequent type, followed by hierarchies, adhocracies, and markets.

Significant differences were present among these four types of cultures on dimensions of organizational effectiveness. Cultures were most highly effective in domains of activity that were consistent with their primary emphases. The clan culture, for example, was more highly effective than any other culture in dimensions relating to morale and human resource concerns.

The adhocracy culture was more highly effective than the other cultures in dimensions relating to the external environment and academic quality. The market culture scored highest of all cultures on the ability to acquire resources from the external environment. The hierarchy culture did not score highest on any of the nine effectiveness dimensions, but that may be because none of the dimensions of effectiveness assesses the efficiency and control functions of the organizations (i.e., those areas emphasized by hierarchy cultures). One implication of these analyses is that it may be possible to predict in what area an institution will excel based on the type of culture that it possesses.

The different types of cultures also were found to be associated with markedly different organizational traits. Not only did discriminant analyses find groups of variables that significantly discriminated among the cultures, but comparisons among the four cultures using analysis of variance found significant differences on institutional saga, centralization, morale, pluralism and political decision making, various types of strategies (e.g., diversification, proactivity, expansion), and size. In sum, the most important cultural differences among the institutions in this study were related to type, not strength or congruence. This general conclusion, while being contrary to some authors' assertions in the popular literature, is nevertheless in harmony with the point of view of Wilkins and Ouchi (1983), Mason and Mitroff (1973), and Mitroff and Kilmann (1975, 1976).

This suggests at least three implications for managers who are interested in diagnosing and managing their organizations' cultures so as to enhance effectiveness. Admittedly, these implications are speculative, due to the exploratory nature of the study and to the lack of depth in the cultural measurements. Moreover, no causal associations were tested, so attributions

of causality cannot be made. On the other hand, nonsupport of the assumptions of previous authors regarding the power of cultural congruence and strength suggest that some speculations may be in order regarding the relationship between the management of culture and organizational effectiveness.

1. Managers should be sensitive to the variety of cultures that exist in their organizations. Cultural paradoxes may frequently exist. In most organizations, attributes of several cultures will be present, some of which may have opposite values and emphases. For example, attributes of a clan and a market may exist in the same organization even though these cultures are opposite in emphasis. Different cultures also may characterize different parts of the organization, so sensitivity to subcultures is a requirement of managers. The most important consequence of multiple cultures in organizations, however, is the presence of paradox. Peters and Waterman (1982), Van de Ven (1983), Quinn and McGrath (1984) and Cameron (1985) have pointed out that "the excellent companies have learned to manage these paradoxes (Van de Ven, p. 623)." Successful managers should not emphasize cultural congruence so much as they manage the contradictions and incongruencies in their organizations. Clarity regarding which cultural types are present is more important than forcing congruency and consistency.

2. Managers may want to capitalize on criteria of effectiveness that are consistent with their dominant cultures. In studies of organizational life cycles and the associated changes that occur in criteria of organizational effectiveness, Cameron and Whetten (1981) and Quinn and Cameron (1983) found that as the characteristics of organizations changed over time, so did the criteria of effectiveness that were most important for long-term survival. Similarly, as organizational cultures evolve and develop, the criteria of effectiveness emphasized (and achieved) by those organizations may change.

This requires that managers be sensitive to the dominant cultural types that exist in their organizations at various stages of the organizational life cycle and capitalize on organizational strengths. When organizations have dominant cultures, those cultures are high performers in consistent domains.

3. Managers can use the typology of organizational cultures discussed in this paper as a useful diagnostic tool. Diagnosis using the framework presented in Figure 2 is especially valuable when the organization is faced with a crisis, when merger or acquisition occur, when major change is required, when leadership succession occurs, or when other major disruptions occur that lead to ambiguity and resistance. It is critical that managers have a good sense of their organizations' culture, particularly its dominant culture. Instituting change that contradicts culture (i.e., merger, acquisition, expansion) can lead to high degrees of resistance and subversion. Cultural types become dominant because of the emphasis placed on certain attributes and values to which organization members are exposed. Accurately diagnosing an organization's culture involves arraying the values and emphases of the organization on the two dimensions evolving from the Jungian framework, and classifying the culture as one of four types. This not only can help enhance managers' understanding of the understructure of their own culture, but it can make it possible for them to change or encourage certain types of cultural attributes. If managers are to perpetuate or encourage one type of culture rather than another, they may want to become familiar enough with the framework that they can foster appropriate assumptions and interpretations.

Footnotes

¹The labels used by Jung to characterize the polar ends of these continua do not carry modern-day connotations usually associated with those words. "Feeling," for example, does not relate to emotions or to touching, rather its meaning is more complex as characterized by the descriptive words used in Figure 1.

²The nine dimensions of organizational effectiveness assessed in the questionnaire were: (1) Student educational satisfaction, (2) Student academic development, (3) Student career development, (4) Student personal development, (5) Faculty and administrator employment satisfaction, (6) Professional development and quality of the faculty, (7) System openness and community interaction, (8) Ability to acquire resources, and (9) Organizational health. Structural variables assessed included specialization, formalization, centralization, and loose coupling. Organizational processes associated with the presence of decline (see Cameron and Chaffee, 1984) also were assessed including, lack of planning and innovation, scapegoating of leaders, resistance to change, turnover, low morale and slack resources, pluralism, low leader credibility, conflict, internal succession, and locus of control. Organizational strategic orientations assessed included defender, analyzer, and prospector orientations (Miles and Snow, 1978); domain defense, domain offense, and domain creation (Miles and Cameron, 1982); diversification, boundary spanning, and proactive initiatives. The presence of organizational saga (Clark, 1970), or a special sense of uniqueness, mission, and purpose in the institution was assessed. The assessment of bureaucratic, autocratic, collegial, rational, political, and organized anarchy decision processes was included in the questionnaire. And the assessment of the predictability, turbulence, competitiveness and potency, and resourcefulness of the external environment was also included.

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