Emulation in Academia: Balancing Structure and Identity

Giuseppe Labianca • James F. Fairbank • James B. Thomas •
Dennis A. Gioia • Elizabeth E. Umphress
Goizueta Business School, 1300 Clifton Road, Emory University, Atlanta, Georgia 30322
Department of Management and Industrial Relations, College of Business and Economics, West Virginia University, P.O. Box 6025, Morgantown, West Virginia 26506
School of Information Science and Technology, The Pennsylvania State University, 504 Rider Building, 120 South Burrowes Street, University Park, Pennsylvania 16801
Department of Management and Organization, Smeal College of Business Administration, The Pennsylvania State University, 403 Beam BAB, University Park, Pennsylvania 16802
A.B. Freeman School of Business, Tulane University, New Orleans, Louisiana 70118
joe_labianca@bus.emory.edu • jfairban@wvu.edu • jthomas@ist.psu.edu • dag4@psu.edu • eumphre@tulane.edu

Abstract

This study seeks to expand our understanding of interorganizational emulation decisions made by top administrators in a broad sample of American colleges and universities. We analyze their emulation choices and show that these decision makers tend to emulate universities similar to their own. Our findings suggest, however, that the choice of emulation target within one's industry is not simply a matter of choosing the most structurally similar organization, but rather that identity-related attributes, such as reputation, organizational image, and organizational identity, also play a significant role in the emulation decision. The data also show that industry subgroups based on emulation decisions (strategic reference groups) differ in both structural and identity-related attributes. Further, interorganizational emulation decisions based on tactics of upward comparison (e.g., emulating universities with better reputations) are associated with greater strategic change, while downward comparisons are associated with greater perceived external threat. Finally, the data show that top management's perceptions of the university's level of environmental threat are related to their choice of a more coarse-grained or fine-grained set of attributes when determining the emulation target. We discuss some of these findings' implications for theory and practice.
(Emulation; Strategic Reference Groups; Organizational Image And Identity; Reputation)

Introduction and Overview

There have been recent calls in the literature for more study and greater understanding of microlevel processes that create macrolevel outcomes (e.g., DiMaggio and Powell 1991, Lant and Baum 1995). This paper investigates how the microlevel process of interorganizational emulation is related to macrolevel outcomes such as the creation of strategic reference groups. We define interorganizational emulation as striving to equal or surpass a comparison organization on a set of strategic features. As organization members compare their organizations against others, they classify themselves as similar to some referent organizations and recognizably different from others on a variety of factors (Albert and Whetten 1985). Over time, these referent classification schemes become a means to describe organizational variation within an industry (Porac et al. 1989).

Strategic reference groups are a manifestation of these classification schemes (Fiegenbaum and Thomas 1995). We argue that organizations in a strategic reference group resemble each other, not only on the key objective attributes such as size and structure which are often used to identify strategic groups (e.g., Hunt 1972, Dess and Davis 1984, McGee and Thomas 1986, Porter 1979, Fiegenbaum and Thomas 1995), but also on important identity-related attributes such as organizational identity, image, and reputation. As Albert and Whetten (1985) point out, classifications based only on objective attributes are often not specific enough to capture the variation across an industry. Objective attributes serve mainly to form a backdrop, whereas classifications that also include perceptual attributes provide a more complete, accurate, and insightful portrait of the strategic reference groups in an industry.

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The emulation of one set of organizations as opposed to another is not merely a subject of academic interest, but a managerial decision that has serious implications for organizations. Gioia and Thomas (1996) found that the choice of emulation targets drove changes in a university's image and identity, and ultimately affected major strategic decisions and structural changes. Elsbach and Kramer (1996) found that threats to an organization's identity from the external environment drove top managers in elite business schools to alter their strategic reference groups so that they could affirm their organizational identity and blunt negative news from outside rating sources about the organization's reputation. Grounded theories emerging from these case studies show that interorganizational emulation choices affect internal change as well as an institution's ability to access needed external resources, and that these emulation choices are integrally linked with both structural factors and identity-related factors.

The present study provides two main contributions to the study of interorganizational emulation and comparison. First, we provide a model describing how interorganizational emulation is related to *both* structural and identity-related features of organizations throughout an industry. We ask the key question: Whom do universities seek to emulate and why? We expect structural barriers (what Caves and Porter 1977 termed "mobility barriers") between industry subgroups to form the backdrop to emulation decisions. Thus, strategic groups defined by structural differences should also act as reference groups (Fiegenbaum and Thomas 1995). Such structural barriers would likely prevent some universities (e.g., small, private, religiously affiliated universities) from emulating one set of universities (e.g., large state universities) while steering them toward emulating another set. However, emulation choices disclosed by top managers in academia demonstrate that, although structural attributes are important in explaining emulation choices in the industry, identity-related attributes offer even greater insights into the complexities of the process. Our findings strongly imply that choosing an organization to emulate within one's industry requires singling out an organization that is not just structurally similar, but whose identity-related attributes make a good fit as well. Further, we identify industry subgroups according to their emulation decisions (i.e., strategic reference groups) and show that these subgroups differ on both structural and identity-related attributes.

Our second major contribution is to develop a more complete understanding of why universities choose to emulate one set of universities instead of another. At the heart of interorganizational emulation is a process of comparison. Most studies of interorganizational comparison argue that downward comparisons are made in an attempt to protect the organization's identity, image, and reputation from external threats (e.g., Elsbach and Kramer 1996, Porac et al. 1999). In contrast, we show that both upward and downward comparisons are involved in interorganizational emulation and that upward comparisons are much more prevalent than previous portrayals had led us to expect. We also show that top management's perceptions of the level of environmental threat and the degree of change that the university has been undergoing are related to whether emulation is upward or downward, and to whether a more coarse-grained or fine-grained set of attributes is used to determine the emulation target.

Our argument proceeds as follows. We define emulation and discuss its relationship to the similar and theoretically relevant concepts of classification schemes, strategic reference groups, and interorganizational comparison, competition, and imitation. We next summarize the grounded models that form the theoretical foundations of this work (Elsbach and Kramer 1996, Gioia and Thomas 1996). We then propose hypotheses about the role of both structural and identity-related factors in emulation choices. Finally, we propose factors that motivate top managers to engage tactically in either upward or downward comparisons and coarse-grained or fine-grained comparisons when they emulate other organizations.

Defining Interorganizational Emulation

Webster's dictionary defines emulation as "striving to equal or excel another in qualities or actions." Implicit in this definition is a comparison against a referent "other." We define interorganizational emulation as striving to equal or surpass a comparison organization or organizations on a set of strategic qualities or features. Organizations that choose similar strategic referents form a strategic reference group. Organizations that serve as comparison others might or might not be direct competitors; emulation might not be reciprocated by the organization being emulated. Note that the phrase "equal or excel another" implies that sometimes organizational members will strive to improve their organizations to "equal" a superior organization (an upward comparison), while other times they will strive to "excel" against an inferior organization (a downward comparison).

Managerial cognition researchers have studied interorganizational emulation (Gioia and Thomas 1996) and related topics, including organizational referents or comparisons (e.g., Elsbach and Kramer 1996, Fiegenbaum

and Thomas 1995, Fiegenbaum et al. 1996, Palmer and Ketchen 1998, Porac et al. 1999) and organizational competitive sets (e.g., Lant and Baum 1995, Porac et al. 1989, Porac and Rosa 1996, Porac et al. 1995, Reger and Huff 1993). Managerial classification schemes have been shown to be crucial because they form the basis of imitative behavior between organizations (e.g., Fiegenbaum and Thomas 1995, Kraatz 1998) and because they affect subsequent managerial and organizational actions (e.g., Meyer 1982; Walsh and Fahey 1986, Walsh et al. 1988). Although these constructs are all closely related, the distinctions between them and interorganizational emulation point up our study's unique contributions.

Emulation vs. Competition

Most research on classification schemes within an industry or organizational field has examined managerial cognitions about the focal organizations' set of direct competitors or the competitive landscape in their industry (see Table 1 for a summary). Researchers have shown that managers' perceptions of those organizations that comprise their set of closest competitors reveal identifiable, subjectively based industry subgroups that differ on structural dimensions (e.g., Porac et al. 1995). Lant and Baum (1995) found that organizations within these cognitively derived competitive groups more closely resemble each other (not only structurally, but also in their managers' perceptions) than organizations in other groups. Reger and Palmer (1996) found a gap between managers' structural and cognitive views of their competitors. Analyses revealed managerial perceptions of competitive groups could be fairly static, even when major upheavals were creating objective changes in the competitive environment. Odorici and Loma (2001) reached a similar conclusion. Collectively, these studies suggest that the stratification of an industry into strategic groups is affected by both structural and cognitive factors—a general tenet we adopt as we investigate the role of both structural and identity-related attributes in the description of strategic reference groups.

Our study focuses on emulation rather than competition. Although related in practice, these constructs are conceptually distinct. One would expect direct competitors to make up a portion of the set of organizations that a firm seeks to emulate, but two distinct motives may drive emulation choices beyond direct competitors: self-enhancement and self-preservation. Through self-enhancement, organizations might emulate broadly to gain strategic advantage over their competitors (e.g., Fiegenbaum et al. 1996). Through self-preservation, the need to insulate the organization from external threat can also lead to not emulating one's direct competitors. For example, Porac et al. (1999) found that organizations conduct and report interorganizational comparisons outside their normal set of competitors when the focal organization is under great external threat. By definition, competition is reciprocated, whereas emulation may or may not be. Organizations compete *against each other* for scarce resources, but because emulation is driven in part by the desire to bask in the glory of more prestigious organizations (Gioia and Thomas 1996), emulation is less likely to be reciprocated than competition, although we do not exclude that possibility.

Emulation vs. Imitation

Emulation is also similar to, yet distinct from, imitation. Imitation is copying. Imitation or mimesis plays a central role in neoinstitutional theory, as it is considered one of the main mechanisms through which organizations become isomorphic (that is, structurally and cognitively similar) over time (e.g., DiMaggio and Powell 1983, Haunschild and Miner 1997). Interorganizational imitation has recently received increased research attention (e.g., Burns and Wholey 1993, Galaskiewicz and Wasserman 1989, Haunschild 1993, Korn and Baum 1999, Kraatz and Zajac 1996, Zajac and Kraatz 1993), but one organization can imitate one specific aspect of another organization without necessarily emulating that organization. Thus, our definition of interorganizational emulation incorporates the distinction between *strategic* reference and *operational* reference, or narrow, programmatic imitation (Bamberger and Fiegenbaum 1996). A university, for example, can imitate another by adding a computer science program (e.g., Kraatz 1998). Yet, when the university top managers in Gioia and Thomas' (1996) study spoke of emulation, they made clear their desire to be seen as successful as another university on a *broad* set of strategic qualities and features. As the university president in their study put it: "I'm a great believer in peer comparisons. You look at the people who have the reputation and the clout for doing the best job and you say to yourself: 'Why aren't we doing those things?'" (p. 381). Thus, while imitation can be the ultimate outcome of the emulation process, it is only a component of the broader emulation process.

Explaining Emulation Choices: Foundations in the Literature

We study the process of emulation because it has been found to play a major role in strategic decision making (Gioia and Thomas 1996) and because the related process of organizational comparison has been shown to lead organizations to stratify themselves into industry subgroups

Table 1 Related Studies

Citation	Research setting	Analysis	Identity-based (e.g., reputation, image, and identity)	Explores interorganizational comparison	Focuses on understanding intra-industry categorization	Explores self-enhancing motive for interorganizational comparison
Gioia and Thomas (1996)	Large public university	Qualitative case study (n = 1)*	Yes—explored relationship between reputation, image, and identity	Yes (emulation)	No	Yes
Elsbach and Kramer (1996)	Elite business schools	Qualitative case comparisons (n = 8)	Yes—explored the role of identity threats	Yes (similarity)	Yes	No—only explores self-protecting motive
Porac et al. (1989)	Sample of Scottish knitwear manufacturers	Qualitative (n = 17)	No	Yes (rivalry/ competition)	Yes	No
Porac et al. (1995)	Sample of Scottish knitwear manufacturers	Quantitative (n = 89)	No	Yes (rivalry/ competition)	Yes	No
Porac et al. (1999)	Sample of Fortune 500 companies	Quantitative (n = 280)	No	Yes (rivalry/ competition)	No	No—only explores self-protecting motive
Fombrun and Zajac (1987)	Sample of financial services companies	Quantitative (n = 114)	No	No	Yes	No
Reger and Huff (1993)	Sample of financial services companies	Quantitative (n = 18)	No	Yes (competition)	Yes	No
Reger and Palmer (1996)	Sample of financial services companies	Quantitative (n = 17)	No	Yes (competition)	Yes	No
Current study	Sample of American universities	Quantitative (n = 372)	Yes	Yes (emulation)	Yes	Yes

*Though this study also included a large-sample quantitative portion (n = 372), the case study portion of their paper was the only one to address the issue of interorganizational categorization and comparison

(Elsbach and Kramer 1996). In a grounded study of a large public university's strategic change effort, Gioia and Thomas (1996) found the decision to emulate a set of other universities to be central. The top management team of the university they studied chose becoming a "top 10 public university" as their guiding vision. They decided to emulate the key features of well-reputed "top 10" schools. Considering questions having to do with intended mission, program offerings, and academic and administrative structures, decision makers identified universities that were similar to (but ostensibly better than) themselves on these dimensions, then chose a specific set of universities to emulate—large public institutions with similar program offerings. Thus, structural factors such as size and ownership were clearly important to emulation.

The same proved true in Elsbach and Kramer's (1996) study. Their comparative case analysis of eight of the top 25 business schools examined the internal and external signaling of selective categorizations of each school into an industry subgroup, as well as interorganizational comparisons. When organization members discovered that their schools were not ranked as highly by external rating agencies as they might wish, they redefined their subgroup, comparing themselves against a smaller and different group of organizations. They chose this new group

of comparison others according to structural features such as size and region to maintain their image as a high-status institution in the eyes of both their external constituents and their own members. For example, Cornell's business school members could still claim to be a "top" business school by categorizing themselves as among the best of the "small" business schools. Similarly, the business school at the University of Texas claimed to be like the University of Michigan's business school, a "powerful regional school with national stature" (p. 460). Elsbach and Kramer (1996) argue that invoking geographic region as a categorization attribute allowed Texas to bask in Michigan's prestigious image. Together, both the Gioia and Thomas (1996) and Elsbach and Kramer (1996) studies suggest that structural factors such as size, ownership, and region affect emulation decisions. We next discuss the theoretical argument for invoking structural similarity in emulation decisions.

Structural Factors

Both strategic reference point theory (e.g., Fiegenbaum and Thomas 1995) and organizational identity management theory (Elsbach and Kramer 1996) illustrate the importance of structural similarities in choosing organizational referents. Strategic reference point theory argues that because of mobility barriers between strategic groups, the most natural referents are those with similar structural variables because they face similar resource constraints. Organizational identity management theory also argues that interorganizational comparisons are more likely with institutions that face similar structural constraints because they allow the focal organization to draw favorable comparisons that preserve its identity and image. Kraatz (1998) found evidence that liberal arts colleges imitate colleges that are most similar structurally; he concludes that close structural similarity indicates similar relevant experiences. And, again, Gioia and Thomas (1996) show that structural factors such as size, type, and ownership weigh heavily on university top managers as they make their emulation choices.

Objective factors represent major resource constraints. Small colleges wishing to add new programs might not have enough faculty to do so. Large universities might find it difficult to implement curriculum changes because of increased bureaucratization. Universities offering doctoral degrees will attempt to attract and retain different types of faculty and students than colleges offering only baccalaureate degrees. Public universities will often need to raise funds from a broader set of sources than private universities, while simultaneously satisfying mandates from legislative bodies. Elsbach and Kramer (1996) found that geographic region is also a critical structural barrier. Universities' fortunes are often tied to regional economies; all but the most elite universities recruit and retain local students. Finally, recent events underscore the importance of church affiliation in emulation choices. For example, universities affiliated with the Catholic Church are increasingly restricted in terms of their program offerings and the religious affiliation of the faculty they hire (e.g., Nolan 1999). Therefore, we propose that, in general, emulation decisions will tend not to stray outside of these major structural barriers. These arguments taken together suggest that:

HYPOTHESIS 1. *An organization will emulate organizations with similar structural characteristics (size, type, ownership, region, and church affiliation).*

Identity-Related Factors

Despite the importance of structural factors, both Gioia and Thomas (1996) and Elsbach and Kramer (1996) found that identity-related factors were crucial to emulation decisions. For example, the top managers in Gioia and Thomas' study wanted members of their university to adopt a more utilitarian orientation with a focus on fund raising and profit-making initiatives. By choosing certain universities as emulation targets, they signaled to internal and external constituents that important strategic changes would occur to the university's central features, and thus precipitated a political struggle within the university between those wishing to embrace change and those seeking to maintain the status quo. Business schools in Elsbach and Kramer's study also chose comparison others on identity dimensions. For example, the heavily research-oriented business schools at Chicago and Stanford would be more likely to use each other as comparisons than Harvard's more teaching-oriented business school.

Organizational Identity Management Theory. Elsbach and Kramer's (1996) results led them to synthesize and extend organizational impression management and social identity theories into what they term organizational identity management theory. Essentially, when an event devalues or calls into question cherished dimensions of the organization's identity and its members' social identity (Dutton and Dukerich 1991), managers redefine interorganizational comparisons. They attempt to manage perceptions by highlighting alternate identity attributes and alternate comparison groups in an effort to affirm their organization's identity or provide a rationale for its relative ranking in the field's status hierarchy. Thus, organizational identity management theory's prime motivational force is the protection of the organization's and members' identities in the face of external threat.

Gioia and Thomas' (1996) grounded theory is consistent with organizational identity management (OIM) theory, but with three notable exceptions that expand OIM. First, whereas responding to external identity threats is the primary motivational force in OIM, Gioia and Thomas argue that another motivational force is top management's proactive desire for strategic enhancement of the organization. Second, because response to external threat is central to OIM, Elsbach and Kramer (1996) focus on downward-looking and fine-grained interorganizational comparisons. In contrast, Gioia and Thomas focus on enhancing the organization through strategic change emphasizing upward comparisons. Finally, OIM is an episodic (essentially short-term) theory built around external identity threats, whereas Gioia and Thomas' grounded theory is more comprehensive and accounts for long-term processes. Our approach employs this expanded version of organizational identity management theory to develop hypotheses that explore these identity-related factors and tactics in detail.

Gioia and Thomas (1996) explain the importance of image and identity in a university's strategic choice of emulation targets. The university administrators they interviewed recognized that any attempted organizational change must both account for the current organizational image and identity held by members, and instill aspirations for achieving a new image and for changing the existing identity. Thus, top managers narrowed their emulation choices to universities whose reputations were similar to their desired future image and whose attributes echoed valued characteristics of their aspired identity. We therefore propose that, in general, universities' top managers will emulate universities of similar image, identity, and reputation.

Image and Emulation. Insider perceptions of how external constituencies view the organization is termed "construed external image" (Dutton et al. 1994; see also Whetten et al. 1992 for a similar notion). Features to be emulated for the purpose of enhancing or sustaining an image are rooted in a set of beliefs about practices and structures viewed as legitimate and successful by others (Meyer and Rowan 1977). Thus, how members perceive the judgments of others concerning their organization or, alternatively, how they want their organization to be judged, will lead managers to emulate certain organizations, but not others (Elsbach and Kramer 1996, Gioia and Thomas 1996).

Research on image has generally focused on present or realized image (cf. Dutton et al. 1994). Gioia and Thomas (1996), however, demonstrate that desired *future* image is also critical, especially if the intention is organizational change. Both present and future image perceptions guide top managers to construct what Gioia and Thomas term "mythical organizations"—a composite of traits from other organizations (often those perceived as "best practice" organizations) that top managers desire their organization to emulate.

HYPOTHESIS 2A. *An organization will emulate organizations of similar present image.*

HYPOTHESIS 2B. *An organization will emulate organizations with similar desired future images.*

Identity Type and Emulation. Organizational identity represents how members answer the question "what kind of organization is this?" (Albert and Whetten 1985; Fiol and Huff 1992). For example, when members perceive their organization's character to be oriented mainly toward economic issues, identity is deemed more "utilitarian"; when they perceive the organization's character to be defined mainly by ideological and value-based concerns, identity is deemed more "normative" (Albert and Whetten 1985). These types of identity imply distinct interpretations of issues and distinct subsequent actions (Dutton and Dukerich 1991). Even if top managers wish to fundamentally alter their organization's identity type, the values held by current organization members will constrain managerial decisions and actions—including emulation choices (Gioia and Thomas 1996). Organizational identity and the clash between utilitarian and normative values are important in any highly institutionalized industry such as academia, and even more important in industries that are both highly technical and institutionalized, including utilities, banking, and health care (Scott 1987) because of their dual emphasis on values and profit making.[1]

HYPOTHESIS 3. *An organization will emulate organizations of similar organizational identity type (on a continuum from mainly normative to mainly utilitarian).*

Identity Strength and Emulation. Milliken's (1990) and Gioia and Thomas' (1996) studies of educational institutions found that associations between perceptions of identity and strategic action related not only to identity type, but also to identity "strength." Identity strength refers to the degree to which members hold a set of beliefs about the organization, or the extent to which members perceive their organization's qualities and values to be distinct or special (Martin et al. 1983, Meyer 1982, Milliken 1990), regardless of the type of identity perceived (mainly normative or mainly utilitarian). Like identity type, identity strength should influence emulation

choices. Internal and external constituencies (e.g., owners, employees, customers) will tend to discourage an organization that has a strong sense of distinctiveness from choosing as emulation targets organizations that are not perceived as sharing the same set of distinctive values. Internal constituencies might be particularly constraining if their self-identity is strongly determined by the organization's identity (Dutton and Dukerich 1991, Elsbach and Kramer 1996, Gioia et al. 2000).

HYPOTHESIS 4. *An organization will emulate organizations of similar identity strength.*

Reputation and Emulation. We adopt Elsbach and Glynn's (1996) definition of "strategic reputation:" an external audience's beliefs about the central and distinctive traits that give an organization a competitive advantage, particularly in incomplete information settings. Note that an organization's construed external image is distinguished from its reputation in that the former is an internal stakeholder perspective while the latter is an external perspective. Gioia and Thomas (1996) found that the university they studied chose to emulate universities with slightly better reputations in an effort to enhance their own reputation. However, choosing schools whose reputations are significantly better than your own as your reference group can be a concern to both internal and external constituents because it signals that your organization's status is lower than the other organizations' (Elsbach and Kramer 1996). Top managers must walk a tightrope—the universities they emulate must be of similar enough reputation to be deemed relevant (Fiegenbaum and Thomas 1995, Kraatz 1998) while remaining nonthreatening (Elsbach and Kramer 1996).

HYPOTHESIS 5. *An organization will emulate organizations of similar reputation.*

Tactics: Upward vs. Downward Comparisons

While the above hypothesis suggests that the general trend will be to emulate organizations of similar reputation, we also recognize that sometimes organizations emulate organizations with either higher or lower reputations than their own—that is, they make an upward or downward comparison. The research on organizational comparison (e.g., Elsbach and Kramer 1996; Porac et al. 1999) often uses social comparison theory derived from social psychology (e.g., Festinger 1954, Suls and Miller 1977) as a starting point to explain why organizational comparisons should tend to be downward. The argument typically refers to the self-preservation motive—wanting to look better than the other organization to protect organizational members from outside attacks and boost self-identity. The flip side of social comparison theory, upward comparison that elevates self-worth by placing one in a superior group, has generally been ignored in both psychology (Collins 1996) and organizational comparison research. Yet psychological studies of social comparison have consistently shown that people compare themselves with others whose ability levels are similar to, but slightly better than, their own (Gruder 1977, Wood 1989). Upward comparisons improve self-worth by allowing the individual to both share in the glory of a superior group (Wheeler 1966) and work toward self-enhancement (Collins 1996).

At the organizational level, upward comparisons increase members' identification with their own organization, motivate them to enhance their individual capabilities along with the organization's, and encourage external constituencies to view them as part of a superior group (Gioia and Thomas 1996). Therefore, when organizations pursue strategic change, they are likely to emulate higher reputation targets. When organizations are under external threat, however, they are likely to pursue a self-preservation strategy by comparing themselves to schools whose reputations are lower than their own (Elsbach and Kramer 1996).

HYPOTHESIS 6A. *An organization will pursue the self-preservation tactic (emulating lower-reputation organizations) when under greater external threat.*

HYPOTHESIS 6B. *An organization will pursue the self-enhancement tactic (emulating higher-reputation organizations) when undergoing internal strategic change.*

Coarse-Grained vs. Fine-Grained Comparisons. Elsbach and Kramer's (1996) qualitative results indicated that business schools under the highest external threat invoked more categorization attributions (both structural and identity-related) and categorized themselves in terms of smaller, more specialized groups. These fine-grained comparisons allowed the organization's members to maintain impressions that they belonged to a prestigious group and validated cherished aspects of the organization's identity. In contrast, schools with the lowest external threat categorized themselves into less specialized groups and used fewer bases of categorization. We tested the generalizability of this hypothesis:

HYPOTHESIS 7. *An organization will place itself into more fine-grained comparison groups (emulating on a greater number of identity-related and structural attributes) when it is under greater external threat.*

Methods

We tested these hypotheses in the U.S. higher-education industry because colleges and universities operate in

highly institutionalized environments where comparative objective outcomes are often difficult to measure. Reputation often dominates in determining competitive position; accordingly, perceptions of reputation, image, and identity tend to be very salient for top managers (Elsbach and Glynn 1996, Elsbach and Kramer 1996, Gioia and Thomas 1996, Milliken 1990). We collected the data for the study from a stratified sample of 439 colleges and universities drawn from the larger population of more than 3,000 higher-education institutions in the United States; these represented publicly vs. privately owned schools, as well as three degree-granting types (four-year baccalaureate, masters', and doctorate). To ensure that all regions of the United States (Northeast, South, Midwest, West) were comparably represented, we selected no more than 33% of the institutions in each cell from any one region.

We mailed questionnaires to three top managers at each of the 439 institutions. The top managerial positions included: 1) the president or chancellor; 2) executive vice-president, provost, or vice-president of academic affairs; and 3) vice-president or dean of admissions. In the absence of a vice president or an admissions officer, we included the chief financial officer or controller. We pretested the questionnaire via structured two-hour interviews with a panel of three university professors and two high-level academic administrators.

Of the 1,317 questionnaires we distributed, 611 were returned, representing 372 institutions (individual response rate = 46%; institutional response rate = 85%). Of these 372 institutions, 70 did not identify institutions they wished to emulate. There were 193 single-respondent institutions (52%), 127 two-respondent institutions (34%), and 52 three-respondent institutions (14%). Ninety-six of the responding institutions (26%) were from the Northeast, 81 from the South (22%), 132 from the Midwest (35%), and 63 from the West (17%). One hundred twenty-five of the responding institutions offered the baccalaureate degree only (34%), 132 offered the masters' as the highest degree (35%), while 115 offered Ph.D. degrees (32%). Of the responding institutions, 192 were public (52%) and 180 private (48%), with 112 religiously affiliated (30%) and the remaining 260 secular (70%). We also analyzed the response rate by title; results indicate that each title (president, executive vice-president, other top administrators) represents an equal part of the respondent pool. Further analyses showed that neither title nor the number of respondents from an institution had a significant impact on the findings.

Variables

Independent Variables. Size, type, ownership, church affiliation, region, reputation, present image, desired future image, type of organizational identity, identity strength, perceived environmental threat, and perceived degree of strategic change served as independent variables in this study. We measured *size* by taking the common logarithm of the number of full-time students enrolled; we employed logarithmic transformation of this variable because of the skewed size distribution of the responding schools. We coded *type* in terms of the highest degree offered, with bachelors' degree equal to 1; masters' degree, 2; and Ph.D. and beyond, 3. We coded *ownership* as either public (1) or private (2). We coded *church affiliation* as either yes (1) or no (0). We coded *region* as Northeast (1), Midwest (2), South (3), and West (4). This coding scheme and the states representing these regions were based on the U.S. Department of Education's *Digest of Educational Statistics*. We collected *reputation* from the 1990 *Gourman Report*.[2] The main perceptual variables of interest were present image, future image, identity type, identity strength, perceived environmental threat, and perceived degree of strategic change during the past five years. We collected these perceptual data using Likert-type scales from 1 (very low) to 7 (very high). Because we were dealing with organizational perceptions (the respondents were informing on their own organizations), and because the hypotheses and analyses were at the organizational level, all scale scores were aggregated to the university level by averaging the responses for those universities with multiple informants. We used this procedure for all dependent variables that follow. This aggregation is valid because of the high interrater agreement among informants at each university. See the appendix for all scales, scale reliabilities, and interrater agreement.

Present image refers to how members think others see the institution. We used a 10-item scale (Chronbach's alpha = 0.90; IRA = 0.91) to assess how top managers thought members of peer institutions would rate their institution along various dimensions. We developed and refined these dimensions through pretesting. They included quality of faculty, quality of students, financial/economic status, reputation and prestige, quality of leadership, quality of program offerings, organizational structure, institutional goals, overall academic climate, and academic innovativeness.

We assessed *desired future image* using the same dimensions as the present image scale. Here, however, we asked top management members about the extent to which they wished to emulate the universities that they had identified earlier on each of the ten dimensions; thus, this scale measures the reasons that top management wanted to emulate these other universities as a group, and the degree to which they wanted to emulate each of the

specific dimensions to achieve the desired future image (Cronbach's alpha = 0.97; IRA = 0.90).

Identity refers to "how the institution sees itself" (Dutton and Dukerich 1991). Following Parsons (1960), Etzioni (1961), Cummings (1983), and Albert and Whetten (1985), we assessed the *type of organizational identity* as perceived by the respondents through items that measured whether the institution saw itself as more "utilitarian" (i.e., oriented toward economic factors) or more "normative" (i.e., oriented toward values and ideology). Albert and Whetten (1985) argue that universities lie on a continuum from almost purely normative to having a dual normative/utilitarian identity. We reverse-coded the 7-item scale (Cronbach's alpha = 0.69, IRA = 0.86) so that low scores indicated a more utilitarian identity while high scores reflected a more purely normative identity. An example is: "To what extent is there a feeling that the institution should be (or continue to be) actively engaged in marketing campaigns to attract students?"

To assess *identity strength*, we adapted Milliken's (1990) six-item scale (Cronbach's alpha = 0.84, IRA = 0.84), which had been used in a higher-education research setting. An example item from this scale is: "To what extent does your institution have administrators, faculty, and students who identify strongly with the institution?" Higher scores indicated a stronger identity.

To assess *perceived environmental threat*, we created a five-item scale based on Dess and Beard's (1984) conceptualization of an organization's task environment (Cronbach's alpha = 0.72, IRA = 0.82). High perceived environmental threat was conceptualized as top managers' perceptions that the university's environment was high in dynamism, high in complexity, and low in munificence. An example item is: "To what extent can your environment be described as turbulent or unstable?" Higher scores indicated greater perceived environmental threat.

We measured *perceived degree of strategic change* using a four-item scale based on the quantitative study reported in Gioia and Thomas (1996) (Cronbach's alpha = 0.74, IRA = 0.81). Top managers reported the extent to which their universities had changed along four dimensions over the past five years. These dimensions were developed and refined through pretesting. They included the institution's mission, its major goals, its program offerings, and its funding sources.

Dependent Variable—Emulation Choices. We asked respondents to "identify up to 3 higher-education institutions that you would like to emulate" in an open-ended format. For those universities with multiple informants, we aggregated their emulation choices at the university level by adding them together. Although universities with three informants could name up to nine emulation targets, none of them did. Ninety-eight percent of the universities named five or fewer emulation targets, demonstrating a high degree of interrater reliability.[3] The 302 institutions that provided emulation choices chose 305 institutions to emulate.[4] The universities most emulated in our sample appear in Table 2.

Analyses and Results

Structural and Identity-Related Influences on Emulation Choices

To test our hypotheses that various structural and identity-related factors influence emulation choices, we conducted a QAP multiple regression analysis (Huber and Schultz 1976, Krackhardt 1988).[5] We took the vectors representing these structural and identity-based variables for the 372 responding institutions and created ten 372 x 372 matrices that represented similarities between each of the institutions and every other institution in the sample on each of the variables. Similarity was calculated as the absolute difference scores for categorical variables (type, ownership, region, and church affiliation) and difference scores for continuous variables (size, present image, future image, identity type, identity strength, reputation, perceived environmental threat, and perceived degree of strategic change). These matrices are the independent variables. We then created an asymmetric 372 x 372 interorganizational emulation matrix where 1 = want to emulate and 0 = do not want to emulate. This was the dependent-variable matrix.

We analyzed the data using the UCINET V for Windows network analysis program (Borgatti et al. 1999). To

Table 2 Universities Most Emulated in the Sample

Rank	University	Number of Schools Emulating that University
1	Stanford	25
2	Notre Dame	21
3	Berkeley	19
4 (tie)	U. of Michigan	18
4 (tie)	Duke	18
6 (tie)	Harvard	17
6 (tie)	U. of North Carolina	17
8 (tie)	Miami of Ohio	16
8 (tie)	U. of Virginia	16
10 (tie)	Carleton	14
10 (tie)	Williams	14

conduct a QAP multiple regression, the algorithm performs a standard multiple regression across corresponding cells of the independent and dependent matrices (Borgatti et al. 1999). Then, the algorithm permutes all rows and columns of the dependent matrix randomly and recomputes the regression. This step is completed 500 times to estimate the standard error. The results from the second step are in the form of r-squared values and coefficients. Each result from Step 2 is compared to the coefficient computed in Step 1. Then, the algorithm computes the number of random permutations (from Step 2) that yielded results as extreme as the ones computed in the first step. Using QAP regression analyses helps to overcome the problems of network autocorrelation and provides an unbiased test of the significance of the multiple regression coefficients (Krackhardt 1988).

We tested Hypotheses 1 through 5 using a QAP multiple regression with all the similarity matrices as independent variables and emulation choices as the dependent variable. Results indicate that nearly all of the independent variables are related to emulation choices, providing support for most of the hypotheses (see Table 3). Thus, educational institutions emulate schools of similar size, type, and ownership that are in the same geographic region, and that are similarly church-affiliated or secular. In addition, we found that educational institutions also tend to emulate other schools that were similar in terms of reputation, identity type, present image, and future image. However, we found similarity in identity strength to be unrelated to emulation choice.

Table 3 Structural and Identity-Related Influences on Emulation Choices QAP Multiple Regression Results

Overall Regression Model Fit
$p < 0.001$

Regression Coefficients

Independent Variable[1]	Unstandardized Coefficient
Intercept	0.0089***
Identity-Related Factors	
Reputation	−0.0007**
Identity Type	−0.0009**
Identity Strength	−0.0002
Present Image	−0.0012***
Future Image	0.0019***
Structural Factors	
Ownership	−0.0028***
Region	−0.0008***
Type	−0.0015***
Size	−0.0013*
Church Affiliation	−0.0019***

[1]The independent variables above are matrices that describe the similarities in each of the above variables between the emulating university and the emulated university. A significant coefficient indicates that the emulating university was similar to the emulated university on that attribute.

Groups Based on Emulation Choices

We began the paper by arguing that structural and identity-related barriers between industry subgroups would likely prevent some universities from seeking to emulate one set of universities but steer them toward emulating another set. The above QAP multiple regression results indicate that both structural and identity-related variables affect universities' emulation choices at the dyadic level between individual universities. But, because our arguments also applied to strategic reference groups, we also analyzed the data at this level. The first step in these analyses is to partition the 372 educational institutions into industry subgroups based on their emulation choices. The second step is to conduct a multivariate descriptive discriminant analysis to see if the industry subgroups differ on our structural and identity-related variables.

Analytical Techniques. We partitioned the 372 universities using the CONCOR algorithm (Breiger et al. 1975, Lorrain and White 1971, White et al. 1976; see Scott 1991, and Wasserman and Faust 1994, for a description of the algorithm) on the UCINET V for Windows network analysis software package (Borgatti et al. 1999). This procedure splits blocks based upon the convergence of iterated correlations.[6] We created a square asymmetric 499 x 499 interorganizational emulation matrix that included the 372 respondent institutions (rows) and the 305 emulated institutions (columns). If a university was emulated but was not part of the sample, the row was all zeros. If the university emulated another, but was not emulated by another university, the column was all zeros.

Each university's emulation patterns are correlated with every other university's. The data are split into two blocks such that members of the same block are positively correlated, and members of different blocks are negatively correlated. Successive splits are then applied to the separate blocks. Diagonal values were treated as missing data, the maximum number of partitions selected was four, 25 iterations were performed, and the convergence criterion selected was 0.2, as recommended by Borgatti et al. (1999) for robust solutions.

We identified ten industry subgroups by means of this CONCOR analysis. Despite CONCOR's broad use, a

number of drawbacks have led Wasserman and Faust (1994) to urge researchers to exercise caution when using the algorithm. They point out that, as with any partitioning or clustering technique, the researcher is ultimately responsible for choosing the point that gives the most useful and interpretable partition. Therefore, two members of the research team, as well as an independent graduate student worker, qualitatively assessed each university's emulation pattern and compared it to all of the other universities' patterns in the group to confirm the face validity of the 10 industry subgroups. One hundred percent consensus was achieved, indicating that the partitioning was both useful and interpretable, although further confirmation had to await the results of the discriminant analysis that follows.

The second major step was a descriptive discriminant analysis (see Huberty 1994). This analysis allows us to describe the major differences between the industry subgroups generated in the previous step in a multivariate sense, rather than run 10 separate ANOVAs for each variable. The criterion set included the five structural variables (size, type, ownership, geographic region, and church affiliation) and the five identity-related variables (reputation, present image, future image, identity type, and identity strength). The correlation matrix for these variables is presented in Table 4. This analysis was exploratory in nature because we did not have an a priori theory about how the identity-related and structural variables would combine to describe the differences between the industry subgroups.

The discriminant analysis revealed four significant underlying canonical dimensions (Wilk's Lambda = 0.80, $chi^2(42) = 64.02$, $p < 0.02$) that collectively accounted for 95.1% of the variance of the criterion set. To interpret these relationships, we used standardized canonical discriminant function coefficients, as recommended by Stevens (1996). Statistically significant coefficients greater than or equal to 0.30 were used for interpretation (Pedhazur 1982). The significant coefficients linking these criteria variables with industry subgroup membership are reported in Table 5.

The first dimension contained significant loadings from two structural variables: institution type and ownership. High values along this dimension indicated a high percentage of private, graduate-degree-granting institutions in the subgroup. The second dimension contained significant loadings from the same two structural variables: institution type and ownership. Whereas the two variables were negatively related in the first dimension, they were positively related in this dimension. High values along this dimension indicated a high percentage of public, graduate-degree-granting institutions in the subgroup. The fact that two dimensions included the same structural variables indicated that type and ownership were unrelated in the overall sample (as suggested by their low correlation, −0.07), but that they could combine in different ways to predict emulation subgroup membership.

A mix of structural and identity-related variables defined the third dimension: size, reputation, and church

Table 4 Means, Standard Deviations, Alphas, Interrater Agreement, and Zero-Order Correlations

Variable	Mean	S.D.	Alpha*	IRA†	Emulation Subgroup	Size	Type	Ownership	Region	Church Affiliation	Reputation	Present Image	Future Image	Identity Type	Identity Strength	PET
1. Size ($\log_{10}$)#	3.65	0.49	NA	NA	−0.34**											
2. Type	1.97	0.80	NA	NA	−0.39**	0.71**										
3. Ownership	1.48	0.50	NA	NA	−0.08	−0.45**	−0.07									
4. Region	2.44	1.05	NA	NA	−0.05	0.08	0.03	−0.20**								
5. Church Aff.	0.30	0.46	NA	NA	0.15**	−0.41**	−0.19**	0.61**	−0.05							
6. Reputation	3.32	0.58	NA	NA	−0.41**	0.65**	0.66**	−0.07	−0.06	−0.29**						
7. Present Image	5.07	0.72	0.90	0.91	−0.07	−0.02	0.06	0.25**	−0.05	0.16**	0.20**					
8. Future Image	5.26	0.68	0.97	0.90	−0.15**	−0.03	0.01	0.10	0.01	0.04	0.03	0.27**				
9. Identity Type	3.77	0.75	0.69	0.86	−0.01	0.07	−0.02	−0.16**	−0.02	−0.09	0.11**	−0.22**	−0.15**			
10. Identity Strength	5.60	0.79	0.84	0.84	0.05	−0.15**	−0.07	0.20**	−0.03	0.14**	0.04	0.54**	0.18**	−0.27**		
11. Perceived environmental threat	4.93	0.91	0.72	0.82	−0.19**	0.29**	0.30**	0.10	−0.08	0.02	0.25**	0.10*	0.09	−0.11*	−0.04	
12. Perceived strategic change	14.51	3.95	0.74	0.81	0.08	0.00	−0.04	−0.14**	0.13*	−0.07	−0.12*	−0.01	−0.09	−0.14**	−0.08	0.20**

*Cronbach alphas calculated across all informants ($N = 608$)

†Interrater agreement for those institutions with more than one informant ($N = 179$), and then averaged across those universities. IRAs were calculated as a summary assessment of within-university interrated agreement (r_{wg}) (James et al. 1993) on each scale as a whole.

#Raw size range was 188 to 66,909 students.

Table 5 Standardized Canonical Discriminant Function Coefficients Linking Criterion Variables with Subgroup Membership[a]

	Canonical Dimensions			
Variables	1	2	3	4
Type	0.42	0.45		
Ownership	−0.48	0.61		
Size			1.04	
Reputation			−0.91	
Church Affiliation			0.56	
Present Image				0.61
Future Image				−0.30
Identity Type				0.82
Identity Strength				−0.35
Eigenvalue	0.95	0.47	0.27	0.14
Percent of Variance	50	25	14	7
Wilk's Lambda = 0.80				
Chi-Square (42) = 64.02*				

[a]Coefficients greater than 0.30 are indicated and used for interpretation (Pedhazur 1982)

affiliation. High values in this dimension indicate a high percentage of large institutions with lower prestige ratings that were church-affiliated in the subgroup.

The fourth and final dimension was defined by the four remaining identity-related variables: present image, future image, identity type, and identity strength. High values in this dimension indicated a high percentage of institutions in the subgroup that believed they currently had good images (high present image), felt little need to emulate other organizations to improve that image (low future image), had normative identities, and did not feel that their identity was very strongly held by its their members. The fact that normative identities loaded on with weak identities was surprising. However, as Zajac and Kraatz (1993) point out, external forces have pushed academia to become more utilitarian, and the battles between values and financial orientation have been most heated (thereby creating a weak identity) in those institutions where the normative values were most firmly entrenched to begin with (e.g., liberal arts colleges).[7]

Overall, the results indicate that while structural variables account for most of the variance explained (the two dimensions characterized by type and ownership accounted for 74% of the variance), identity-related variables in the final two dimensions explain most of the additional variance explained.[8] It is also interesting to note that the identity-related variable in the third dimension, reputation, constitutes an outsider perspective on the organization, whereas all the identity-related variables in the fourth dimension focus on image and identity—an insider perspective. Thus, the first three canonical dimensions reflect an outsider's structural and identity-related perspective—they indicate that emulation choices are driven by the types of characteristics employed by media like *U.S. News and World Report* to categorize universities. The fourth canonical dimension, however, captures the top-managers' insider perspective on the image and identity of their university. This dimension is also significantly related to emulation choice. See Table 6 for a summary of the differences between the subgroups in addition to the means of the subgroups on each of the variables included.

Upward vs. Downward Emulation Choices

Although our results indicate that universities tend to emulate universities that are similar in structure and identity, we were also interested in exploring the reasons behind deviations from this typical pattern. The histogram in Table 7 indicates the relative reputational status of the emulated set of universities, and confirms that although the majority of interorganizational emulation occurs with universities of similar reputation, interorganizational emulation is skewed toward upward comparisons.

To test Hypotheses 6a and 6b, we conducted a QAP correlation. We created a 372 x 372 matrix representing the difference in reputation between the emulating university and the emulated university. This matrix was then QAP correlated with the two matrices that represented top-managers' aggregated perceptions of their universities' environment (perceived environmental threat and perceived degree of strategic change). These vectors were repeated 372 times to form a square matrix (see Kilduff and Krackhardt 1994). Overall, results from the QAP correlation support Hypotheses 6a and 6b; that is, during periods of great strategic change, top managers emulate universities with higher reputations ($r = 0.09$*), but under greater environmental threat emulate universities with lower reputations ($r = -0.18$***).[9]

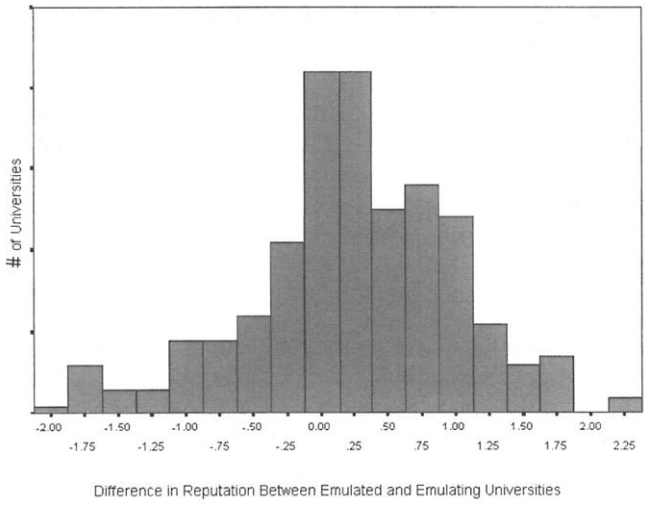
We next tested Hypothesis 7, which argues that greater external threat will drive organizations to employ more fine-grained comparison groups in pursuit of more favorable comparisons. We performed a median split on the perceived environmental threat variable, and then ran two separate QAP multiple regressions with the emulation choices of the least-threatened schools as the dependent variable in one model, and the emulation choices of the most-threatened schools in the second model. Again, we entered all the structural and identity-based matrices as independent variables. Results of the two regression

Table 6 Summary of Differences Among Industry Subgroups Based on Emulation Choices

	Subgroup A (n = 35)	Subgroup B (n = 23)	Subgroup C (n = 34)	Subgroup D (n = 35)	Subgroup E (n = 30)	Subgroup F (n = 52)	Subgroup G (n = 28)	Subgroup H (n = 23)	Subgroup I (n = 40)	Subgroup J (n = 70)
Top 3 Emulated Universities (by frequency)	1. Stanford 2. Harvard 3. MIT	1. Duke 2. Vanderbilt 3. Stanford	1. UNC 2. Virginia 3. Texas, Michigan	1. Miami (OH) 2. George Mason 3. UCLA	1. Carleton 2. Williams 3. Swarthmore	1. William & Mary 2. UNC—Asheville 3. James Madison, Davidson, Berea	1. Notre Dame 2. B.C. 3. Santa Clara	1. Alverno 2. Santa Clara 3. St. Olaf	Unique selections	None provided
Canonical Dim. 1	High	High	High	High	Low	Low	Low	Low	Mixed	Mixed
Canonical Dim. 2	High	High	Mixed	Low	Mixed	Low	High	Mixed	Mixed	Mixed
Canonical Dim. 3	Low	Mixed	Mixed	High	Low	Mixed	High	Mixed	Mixed	Low
Canonical Dim. 4	Mixed	Low	Low	High	High	Low	Mixed	Mixed	Low	Mixed
Example members of subgroup	Brown, CalTech, Lehigh, NC State, Purdue	Emory, Marquette, SMU, Tulane, Tufts	Golden Gate, Univ of Florida, Univ of Missouri, UNC Wilmington, Valdosta State College	Central Michigan Univ, Delaware State College, UMass Boston, Univ of Southern Maine, West Georgia College	Brandeis, Davidson, Gettysburg, Hood, Lafayette	Concordia Coll of MI, Lock Haven Univ of PA, Pace Univ, Stillman College, Tennessee Wesleyan College	Canisius College, Duquesne Univ, Loyola of Chicago, Texas Lutheran, Univ of Dallas	Mercy Coll of Detroit, Pacific Lutheran, Regis College, St. Joseph College, Univ of Bridgeport	Bartlesville Wesleyan, Black Hills State, San Diego State, Univ of Evansville, W. Conn St.	Alcorn State, Rhode Island College, Smith Coll, Southern University, Washington University
Means:										
Type	2.65	2.73	2.48	2.47	1.52	1.36	2.07	1.68	1.74	1.70
Ownership	1.57	1.59	1.03	1.00	1.76	1.48	2.00	1.86	1.45	1.30
Size	3.93	3.96	4.12	4.11	3.31	3.35	3.57	3.35	3.60	3.46
Church Affiliate	0.19	0.18	0.00	0.08	0.48	0.33	0.85	0.64	0.29	0.30
Reputation	4.00	3.74	3.60	3.48	3.23	2.94	3.13	2.99	3.13	3.26
Present Image	5.54	5.10	4.87	4.79	5.25	4.85	5.25	5.11	4.96	5.03
Future Image	5.52	5.33	5.37	5.03	5.78	5.38	5.14	5.36	5.02	5.12
Identity Type	3.71	3.51	3.65	4.28	4.04	3.71	3.57	3.66	3.57	3.89
Identity Strength	5.82	5.40	5.50	5.03	5.70	5.56	6.01	5.71	5.50	5.52

Type: 1 = BA, 2 = Masters, 3 = Ph.D.; Ownership: 1 = public, 2 = private; Size: log(10)*students; Church affiliation: 0 = no, 1 = yes

Table 7 Histogram Illustrating the Relative Reputational Status of the Emulated Set of Universities



equations indicate that universities under low threat emulated universities that were similar on six of the 10 dimensions (ownership, region, size, church affiliation, present image and future image), whereas universities under higher threat emulated universities that were similar on eight of the 10 dimensions (ownership, region, degree-granting type, church affiliation, reputation, identity type, present and future image). This suggests some support for Elsbach and Kramer's (1996) hypothesis that when universities are under external threat, they will choose a finer comparison group by increasing the number of attributes by which they compare themselves. We want to emphasize, however, that regardless of whether the environment is perceived as highly threatening or not, both structural and identity-related attributes contribute to the emulation decisions.

Discussion and Conclusion

Our study tracks the emulation decisions of a wide group of universities and finds that, in general, universities seek to emulate universities similar to their own. But what determines similarity? Fiegenbaum and Thomas (1995) assert that structural barriers will determine an organization's strategic reference group, and indeed, our results show that top managers keep structural attributes (size, ownership, etc.) clearly in mind as they scan for organizations to compare themselves to. However, like Elsbach and Kramer (1996), we find that more subjective identity-related attributes are also crucial to a university's definition of itself. Reputation, identity type, image—all of these guide emulation choices as managers seek both to reinforce the cherished aspects of the organization's identity, and to maintain or improve the image presented to outsiders (Gioia et al. 2000).

We also highlight the strategic aspects of emulation. Expanding on Elsbach and Kramer's (1996) grounded organizational identity management theory (OIM), we show that top managers tend to emulate upward in times of great positive change, likening themselves to universities of superior reputation to facilitate their own organization's improvement. However, in times of great environmental threat, they tend to emulate downward, defining their strategic reference group more narrowly and comparing themselves to lower reputation schools to bolster their own image, possibly indicating a threat-rigidity response (Staw et al. 1981).

Theoretical Implications

This study indicates that universities generally emulate others of *similar* reputation. Our results support Kraatz's (1998) argument that structural constraints (ranging from internal finance, politics, and bureaucracy to external governance, legislation, and local competition) prevent organizations from imitating others of far greater prestige. Our data support Elsbach and Kramer's (1996) observation that aiming too high may intimidate internal and external constituents, and Gioia and Thomas' (1996) discovery that universities emulate others of *slightly* higher reputation. We show that slightly upward comparisons outnumber the downward, and conclude that desire for self-enhancement and strategic change drives the former, while self-protection against environmental threat motivates the latter.

Studies of the related phenomenon of interorganizational imitation suggest that upward comparisons may be even more prevalent than we thought. For example, Haveman's (1993) study of savings and loans, Burns and Wholey's (1993) analysis of commuter airlines, and Korn and Baum's (1999) investigation of hospitals all conclude that organizations tend to imitate more prestigious companies in their industry. Future research should consider industry environment as a possible contingency variable in the analysis of upward comparison. Many of the above studies were conducted in technical sectors (Scott 1992), where objective performance data are more plentiful, outcomes easier to interpret, and causal performance relationships more transparent than in highly institutionalized, nontechnical sectors like academia. Because "success" is more easily identified in technical industries, upward comparisons likely will target fewer organizations. By contrast, in institutional sectors like academia, we expect the definition of a "successful" college or university to be open to substantial social construction, and

the pattern of emulation to be both diffuse and heavily weighted toward identity-related attributes.

Our study also speaks to the work on strategic groups. Emulation choices result in identifiable industry subgroups that vary widely over a range of structural and identity-related dimensions. For example, schools in Subgroups C and D (see Table 6) tend to be large, public, graduate-degree-granting universities. But if all we did were to use these structural variables to explain their emulation choices, we would miss the crucial identity-related factors involved in those decisions. The main difference between schools in Subgroup C (e.g., Golden Gate University, University of Florida, and UNC Wilmington) and Subgroup D (e.g., Central Michigan University, Delaware State College, and UMass Boston) is that those in D have more normative, weaker identities than those in C. This accounts for the difference in the type of schools each group emulates. We urge researchers pursuing strategic reference point theory to examine identity-related factors that, by capturing industry insiders' cognitions, will add dimension to the information typically provided by structural attributes.

Our results should also be of value to neoinstitutional theory researchers. As Tolbert and Zucker (1999) suggest, understanding the process of interorganizational monitoring is a preliminary step to understanding imitative outcomes that eventually become institutionalized. We support Haunschild and Miner's (1997) assertion that organizations will imitate specific desirable "traits" in other organizations, but emphasize that studies that fail to examine both identity-related and structural traits will ignore an important source of interorganizational variation. Even though neoinstitutional theory assumes a focus on the interaction of managerial cognition and action with the structures they create and sustain (Meyer and Rowan 1977, DiMaggio and Powell 1983), recent research in the field disproportionately emphasizes structural factors to the detriment of our understanding of the role of managerial cognition in imitation and isomorphism.

Managerial Implications

Selecting appropriate referents is the most critical aspect of benchmarking, whereby managers compare their organization's products and process against others' to establish standards of performance (Camp 1989, Jennings and Westfall 1992, Shetty 1993). Strategic reference point theory (Fiegenbaum et al. 1996), prescribes that managers enhance their strategic alignment with the environment by using a broad array of external referent as benchmarks, including those beyond one's strategic group. Our results suggest that top managers striving to improve their organization's performance should broaden their perspective by incorporating both structural and identity-related dimensions in their benchmark decisions—and, importantly, by including referents that differ from themselves in both these dimensions. Managers operating under great external threat should also take heed. While the tendency to engage in fine-grained comparisons may be expedient in the short term to mollify internal and external constituencies, this type of downward emulation is likely to reduce an organization's ability to adequately adapt to environmental threat over time.

Suggestions for Future Research

We were quite interested in the canonical dimensions we derived through our discriminant analysis. The fourth dimension, which includes the four identity-related variables, shows present and future image to be negatively related (Table 4). Our data suggest that schools with low present images seek to emulate other organizations more broadly and to a greater extent than schools with high present images. Future research should examine whether subgroups with low present images and high desired future images (e.g., Subgroup C) achieve great strategic change over time as a result of their top managers' strong motivation to improve.

Schools in Subgroup I (e.g., Bartlesville Wesleyan College, Black Hills State College, San Diego State University), made very distinctive emulation choices. These schools represented a broad mix of structural characteristics and resembled each other strongly only in that fourth image/identity dimension. These institutions all had low present images, high future images, and tended to have strong, utilitarian identities. Perhaps a perceived need to improve the organization's image, coupled with a strong identity that embraces fundraising and financial health, leads colleges and universities to expend extra effort and to experiment with new ideas when looking to improve their image. Because we lacked the data to test this possibility, we leave the question open.

Limitations

We were unable to explore the specific reasons why one university emulates another. Why, for example, did some top managers seek to emulate both George Mason and UCLA—universities that on the surface seem very different? Were the managers applying different criteria for specific individual reasons, or simply looking at general reputation? Future studies should ask respondents to explain their emulation criteria on a school-by-school basis. Our stratified sample also kept us from determining the extent to which emulation was reciprocated or hierarchical, and whether emulation choices were transitive—that is, whether two schools that emulated the same organization also emulated each other. To answer these questions requires a population of organizations.

Conclusion

Our results indicate that Gioia and Thomas' (1996) "mythical organization" that drives changes in an organization's image, identity, and structure, does in fact derive from an amalgam of specific real-world referents that can be traced through a network analysis of emulation in the industry. We urge continuing research on the identity-related underpinnings of interorganizational emulation and comparison.

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Appendix

Questionnaire items were all measured using 7-point Likert-type scales.

Emulation. Identify up to three higher education institutions that you would like to emulate.

Present Image (Cronbach's alpha = 0.90; IRA = 0.91). In general, how do you think your colleagues at *peer institutions* would rate your institution in terms of:

1. The quality of program offerings?
2. The quality of faculty?
3. The quality of students?
4. The quality of administrative leadership?
5. Overall academic climate?
6. Academic innovativeness?
7. Overall reputation and prestige?
8. Financial/Economic status?
9. Your goals?
10. Your administrative structure?

Future Image (Cronbach's alpha = 0.97; IRA = 0.90). To what extent is the reason for wanting to emulate these institutions based on:

1. The institutions' goals?
2. The quality of their program offerings?
3. The quality of the administrative leadership of the institutions?
4. Quality of their students?
5. Quality of their faculty?
6. Academic innovativeness?
7. The organizational structure of the institutions?
8. Economic/financial status?
9. The institutions' reputation and prestige?
10. Overall academic climate?

Identity Type (Cronbach's alpha = 0.69; IRA = 0.86). To what extent . . .

1. do top administrators feel that your institution should be "competing" for students as if they were clients or customers?
2. are financial returns (e.g., from athletics, economic development, etc.) a measure of success for your institution?
3. is there a feeling that the university should be (or continue to be) actively engaged in marketing campaigns to attract students?
4. are budget cuts or increases made selectively across departments or colleges at your institution?
5. is cost-effectiveness the major criterion that guides programmatic or administrative changes?
6. are objective performance measures and statistical data used in decision-making/planning processes?
7. is economic performance considered to be important to fulfilling your institution's mission or goals?

Identity Strength (Cronbach's alpha = 0.84; IRA = 0.84). To what extent . . .

1. do the top management team members of your institution have a strong sense of the institution's history?
2. do your institution's administrators have a sense of pride in the institution's mission and goals?
3. do top administrators feel that your institution has carved out a significant place in the higher education community?
4. do the top management team members *not* have a well-defined set of goals or objectives for the institution?
5. does your institution have administrators who are knowledgeable about the institution's history and traditions?
6. does your institution have administrators, faculty, and students who identify strongly with the institution?

Perceived Environmental Threat (Cronbach's alpha = 0.72; IRA = 0.82). To what extent . . .

1. has the external environment in which your institution operates changed over the last five years?
2. can your current environment be described as competitive?
3. is your environment diverse?
4. can your environment be described as turbulent or unstable?
5. can the institution's environment be described as complex?

Perceived Degree of Strategic Change (Cronbach's alpha = 0.74; IRA = 0.81). To what extent have the following changed over the last five years:

1. the mission of your institution?
2. your institution's major goals?
3. program offerings?
4. availability of funding sources other than tuition?

Endnotes

[1]Scott and Meyer (1983) distinguish broadly between two types of organizational environments: technical, in which organizations produce a product or service that is exchanged in a market that rewards effective and efficient performance; and institutional, in which individual organizations must conform to rules, requirements, and normative values to receive legitimacy and support. Scott (1992) identifies organizations that operate in highly institutionalized environments (e.g., mental health clinics, schools, legal agencies, churches) and others that are strong in both technical and institutional aspects (e.g., utilities, banks, hospitals). These environments will stress image and identity more than highly technical, noninstitutionalized environments (e.g., general manufacturing).

[2]The *Gourman Report* evaluates the strengths and weaknesses of colleges and universities, and rates each based on the following factors: control and organization of the school, number of programs offered and degrees awarded, age of the institution, faculty qualifications (experience, awards, professional productivity), quality of scholastic work from students, admission standards, enrollment, quality of instruction, availability of placement and counseling services, finances of the institution, and number of volumes and accessibility of library materials. After these factors are considered, a number from 2 to 5 is assigned to each school (4.41 to 4.99 indicates a strong institution, 4.01 to 4.40 good, 3.51 to 3.99 acceptable-plus, 3.01 to 3.50 adequate, and 2.01 to 2.99 marginal).

[3]The following number of emulation choices were provided per institution: one (8%), two (19%), three (41%), four (16%), five (14%), six (1%), seven (0.5%), and eight (0.5%).

[4]Seventy of the 372 institutions did not provide emulation choices. These 70 institutions were placed in Subgroup J and included in later analyses. Ten of these 70 schools replied to the questions about why they chose to emulate but failed to disclose their emulation choices. A series of t-tests comparing Subgroup J with the rest of the sample found that these schools were significantly more likely to be secular and under less perceived environmental threat. Perhaps more secular schools are less secure in revealing emulation choices than church-affiliated schools, and less threatened schools may not feel enough environmental pressure to emulate other schools.

[5]We would like to thank one of the anonymous reviewers for suggesting this analysis.

[6]Network analysts usually partition data using one of two techniques: *cohesion* or *structural equivalence*. Cohesion techniques address interactions between nodes (here, universities) in the network, and reveal subgroups (or "cliques") based on the degree of interaction. Cohesion techniques would define cliques in our sample by universities' mutual recognition and interaction, and by their collective understanding that they constitute a group as such. By contrast, structural equivalence techniques, which we employ in our study, form subgroups (or "blocks") based on the similarity of each node's interaction patterns, regardless of whether the universities perceive themselves as linked. Universities that are structurally equivalent occupy a single block because they all connect to (emulate) the same other universities—but not necessarily *to each other*. The CONCOR algorithm we used (see White et al. 1976) allows us to analyze the type of asymmetric data produced by this large, geographically dispersed, status-oriented industry.

[7]We initially found it counterintuitive that educational institutions with normative identities that stressed values would correlate positively with weak identities. We expected such institutions to have strong identities, but a post hoc examination of the data indicated that many of the liberal arts colleges and church-affiliated institutions in our dataset displayed this combination of weak normative identities. We believe that this reflects the major changes in the education industry over the two decades prior to data collection, especially 1) a shift in students' life goals from more humanistic to more utilitarian goals (Astin et al. 1987); 2) increasing specialization in the labor market (Cameron 1984, Jonsen 1984); and 3) dramatic decline in the population of traditional college-age students (cf., Stadtman 1980), which led to intensified competition among schools (Keller 1983). Those changes forced traditionally normative institutions to adopt a more utilitarian approach (e.g., by offering professional programs, seeking external funding, switching from single sex to coed) (Kraatz 1998, Kraatz and Zajac 1996, Zajac and Kraatz 1993). But as faculty members strongly resisted changing the traditional normative values, the identities of these institutions weakened (see Zajac and Kraatz 1993 for a qualitative description of some of these clashes). These ideological clashes were less severe in larger public graduate-degree-granting institutions that had more utilitarian origins than in small liberal arts colleges. And, in schools with religious affiliations, Kraatz and Zajac (1996) found greater likelihood than in secular schools to add professional programs and become more utilitarian. They argue that restrictions on their pool of potential students make such schools more sensitive to environmental pressures for change.

[8]We also conducted separate descriptive discriminant analyses to compare the impact of structural and identity-related attributes on interorganizational emulation. We entered the structural attributes in one discriminant analysis, then entered the identity-related attributes into a separate discriminant analysis. Our results indicate that both structural and identity-related attributes explain similar amounts of variance in emulation group membership (92% and 93%, respectively). Although these analyses more strongly support our argument that identity-related attributes are crucial to the emulation decision, we reported the more conservative discriminant analysis in the body of the paper to allow the structural and identity-related attributes to co-vary. This choice was more in keeping with the inductive stance we took at this point in the data analysis and it provided less potential for bias.

[9]We also ran this analysis looking at size differences in order to be consistent with prior research (e.g., Porac et al. 1999, Kraatz 1998, Haveman 1993) that found larger organizations more likely to be imitated and compared against because they are more successful. The QAP correlation indicates that when top managers perceive their universities going through a greater degree of strategic change, they do not emulate larger universities ($r = 0.01^{ns}$). However, when top managers perceive their universities to be under greater environmental threat, they emulate smaller universities ($r = -0.20^{***}$).

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