© *Academy of Management Review*
2007, Vol. 32, No. 4, 1199–1228.

WHAT'S THE DIFFERENCE? DIVERSITY CONSTRUCTS AS SEPARATION, VARIETY, OR DISPARITY IN ORGANIZATIONS

DAVID A. HARRISON
The Pennsylvania State University

KATHERINE J. KLEIN
University of Pennsylvania

Research on organizational diversity, heterogeneity, and related concepts has proliferated in the past decade, but few consistent findings have emerged. We argue that the construct of diversity requires closer examination. We describe three distinctive types of diversity: separation, variety, and disparity. Failure to recognize the meaning, maximum shape, and assumptions underlying each type has held back theory development and yielded ambiguous research conclusions. We present guidelines for conceptualization, measurement, and theory testing, highlighting the special case of demographic diversity

Differences are a challenge. Organizations have struggled to embrace and manage them successfully. Researchers have struggled to conceptualize and study them effectively. Theories predict differing effects of such differences—that they will spark integrative insights, creativity, and innovation (e.g., Finkelstein & Hambrick, 1996; Hoffman & Maier, 1961), or that they will provoke conflict, division, and dissolution (e.g., Chatman, 1991; Tajfel & Turner, 1979). Guided by these theories, research on differences of many kinds, including demographic variables, values, skills, personality, and pay, has burgeoned. The volume of such research has nearly doubled every five years, with a joint ABI-Inform–PsycInfo search yielding 19 "diversity" investigations in 1988, 45 in 1993, 66 in 1998, and 134 in 2003.

Yet, as noted by many authors, the payoff from this profusion of research has been disappointing (e.g., Harrison, Price, & Bell, 1998; Pitcher & Smith, 2001). Cumulative findings about the consequences of within-unit differences have been weak, inconsistent, or both. A recent meta-analysis of the effects of task-related (e.g. tenure) and non-task-related (e.g., ethnic and gender) diversity revealed no dependable effects on performance or cohesiveness (Webber & Donahue, 2001). Summarizing a narrative review of the same domain, Jackson, Joshi, and Erhardt concluded, "Our examination of these studies yielded few discernible patterns in the results. For most diversity dimensions, the findings across studies were mixed" (2003: 810). Beyond demographic diversity, Bloom and Michel reached a similar conclusion: "Research has yielded mixed results about what amount of pay dispersion is optimal. In some cases, more dispersed pay distributions have been positively related to performance outcomes. . . . In other cases, greater dispersion has been negatively related to performance outcomes" (2002: 33).

In response to these disappointing cumulative results, organizational scholars have refined their theories and analyses, typically by elaborating possible mediators and moderators of connections between within-unit diversity and unit outcomes (e.g., Bloom & Michel, 2002; Carpenter, 2002; Chatman & Flynn, 2001; Simons, Pelled, & Smith, 1999; Williams & O'Reilly, 1998). We applaud these efforts. But we suggest that the very construct of diversity requires closer examination and refinement. Authors frequently

Author order was determined by the flip of a coin. We are grateful to guest editor Terry Mitchell and two anonymous reviewers for supportive and constructive suggestions. Paul Goodman, Don Hambrick, David Hofmann, Susan Jackson, Charles O'Reilly, Ben Schneider, and Jonathan Ziegert also provided helpful feedback and recommendations on earlier drafts of this manuscript. We further appreciate the assistance of several current and former doctoral students in background research for this manuscript: Ellen Godfrey, Andrew Knight, Jessica Saltz, Amy Nicole Salvaggio, and Hock-Peng Sin.

and casually use the term *diversity* and such synonyms as *heterogeneity, dissimilarity,* and *dispersion.* Yet the precise meaning of diversity is not clear. Casting a deliberately broad net, we seek to clarify the meaning of differences within organizational units. We use "diversity" to describe *the distribution of differences among the members of a unit with respect to a common attribute, X,* such as tenure, ethnicity, conscientiousness, task attitude, or pay. Diversity is a unit-level, compositional construct. Thus, in describing the diversity of a given attribute within a unit (e.g., a group or organization), one describes the unit as a whole, not a focal member's differences from other members—which is the subject of most relational demography research (e.g., Tsui, Egan, & O'Reilly, 1992). Diversity, as we use the term, is also attribute specific. A unit is not diverse per se. Rather, it is diverse with respect to one or more specific features of its members.

We propose that diversity is not one thing but three things. The substance, pattern, operationalization, and likely consequences of those three things differ markedly. Diversity within an organizational unit may be indicative of *separation:* differences in position or opinion among unit members. Such differences reflect disagreement or opposition—horizontal distance along a single continuum representing dissimilarity in a particular attitude or value, for example. Alternatively, within-unit diversity may be indicative of *variety:* differences in kind or category, primarily of information, knowledge, or experience among unit members. And, finally, within-unit diversity may indicate *disparity:* differences in concentration of valued social assets or resources such as pay and status among unit members—vertical differences that, at their extreme, privilege a few over many. We use this insight—implicit in some of the diversity literature, but neither widely recognized across domains nor fully understood—as the starting point for an analysis of the construct definition, theoretical substance, and methodological implications of each diversity type. We present this typology in the hope of bringing greater theoretical insight, as well as empirical rigor, to the study of organizational diversity of all forms.

Below, we first provide a brief overview of several examples of diversity theory and research, noting conceptual confusion in definitions of diversity and some resulting ambiguities in the literature. We then offer a detailed presentation of our typology, highlighting differences in the meanings, maxima, and major theoretical streams associated with the separation, variety, and disparity types. We explore the typology's implications for the special case of demographic diversity, showing that the same demographic differences within units may be conceptualized as separation, variety, or disparity. Following this, we describe methodological consequences of our diversity typology. We emphasize the importance of matching a specific operationalization of diversity to a specific conceptualization of diversity. In the final section of the paper, we describe new directions for diversity theory and empirical investigation, enabled and motivated by the diversity typology we propose.

WHAT DO WE TALK ABOUT WHEN WE TALK ABOUT DIVERSITY?

For many reasons, the organizational literature on diversity is confusing—difficult to understand and difficult to synthesize. It is difficult to synthesize in part because consistent findings and cumulative insights have not emerged, but also simply because the diversity literature itself is so diverse. Much of it addresses within-unit differences in demographic variables: gender (e.g., O'Reilly, Williams, & Barsade, 1997), race and ethnicity (e.g., Riordan & Shore, 1997), age (Pelled, 1996), tenure (e.g., Hambrick, Cho, & Chen, 1996), education (e.g., Jackson et al., 1991), functional background (e.g., Jehn, Northcraft, & Neale, 1999), and marital status (e.g., Harrison, Price, Gavin, & Florey, 2002). Further, researchers have investigated differences in many nondemographic variables, including values (e.g., Jehn et al., 1999), attitudes (e.g., Harrison et al., 1998), conscientiousness (e.g., Barrick, Stewart, Neubert, & Mount, 1998), affect (e.g., Barsade, Ward, Turner, & Sonnenfeld, 2000), dress (e.g., Rafaeli & Pratt, 1993), network ties (e.g., Beckman & Haunschild, 2002), individual performance (e.g., Doerr, Mitchell, Schriesheim, Freed, & Zhou, 2002), and pay (e.g., Pfeffer & Langton, 1988).

Synthesis is also made difficult by the varied theoretical perspectives used to guide diversity research. Often, these perspectives suggest contradictory effects. And each perspective has received some (albeit mixed) support in empirical

studies. One such perspective draws on similarity attraction (Byrne, 1971) and social categorization (Tajfel, 1981; Turner, 1985) theories to suggest that diversity of attributes such as age, values, and personality limits within-unit behavioral and social integration, fosters conflict and turnover, and diminishes morale, cohesion, and performance (Williams & O'Reilly, 1998). A second theoretical perspective draws from ecological and cognitive models of variation, selection, and retention (e.g., Campbell, 1960) and the cybernetic principle of requisite variety (Ashby, 1956) to highlight the benefits of heterogeneity in information resources. This perspective suggests that diversity of attributes such as functional background, tenure, and range of network ties may enrich the supply of ideas, unique approaches, and knowledge available to a unit, enhancing unit creativity, quality of decision making, and complex performance (Williams & O'Reilly, 1998). A third perspective builds on distributive justice theory (e.g., Adams, 1963; Deutsch, 1985), tournament theory (e.g., Lazear, 1995; Lazear & Rosen, 1981), and stratification, status hierarchy, or status characteristics theories (e.g., Berger, Fisek, Norman, & Zelditch, 1977; Blau, 1960). This perspective highlights relative comparisons among members to suggest that within-unit diversity, typically of pay but also of other valued assets or resources that connote prestige or power, leads to internal competition, suppression of voice, reduced (quality of) communication, and interpersonal undermining.

Finally, synthesis is made difficult because, as a term, *diversity* has a taken-for-granted quality in the organization literature; it is seldom explicitly defined. Researchers use a variety of labels, often interchangeably, to refer to diversity, including dispersion, heterogeneity, dissimilarity, disagreement, divergence, variation, and inequality, or their opposites, including homogeneity, similarity, agreement, consensus, convergence, and equality. But the more serious problem is that diversity investigators have offered only spare or generic definitions of the principal construct. For example, Hambrick and his colleagues defined top management team heterogeneity as "variation in team members' characteristics" (1996: 662). Pelled, Eisenhardt, and Xin defined demographic diversity as "the extent to which a unit (e.g., a work group or organization) is heterogeneous with respect to demographic attributes" (1999: 1). Jehn et al. defined value diversity by noting that it "occurs when members of a workgroup differ in terms of what they think the group's real task, goal, target, or mission should be" (1999: 745).

None of these definitions is inappropriate. Indeed, our definition of diversity above is quite similar. However, even the most exacting of these definitions ties diversity to differences and goes no further. The definitions do not pinpoint and substantiate the nature of those differences, nor do they specify the collective distribution—the compositional pattern of differences—within a unit. On the one hand, readers may discern from such definitions the meaning of *minimal* diversity: it occurs when there are no differences on attribute X among the members of a unit. On the other hand, the distribution, shape, and meaning of *maximal* diversity are less clear. We know what is *least* diverse but not what is *most* diverse, and, therefore, the direction of "more" (or less) diversity can be ambiguous. For example, when a researcher studies diversity in tenure, personality, or pay, is diversity maximized when the attribute in question is evenly distributed among unit members such that each point along the continuum or each category is represented? Or is diversity maximized when unit members are polarized, half very high and half very low, on the attribute in question? Could diversity be maximized when one unit member clearly surpasses all the other members? Last, is the shape of maximum diversity different depending on the X attribute a researcher is investigating, his or her theoretical perspective, or the predicted effects of increasing diversity? One can confidently order organizational units in terms of increasing amounts of cohesion, morale, size, or performance. But units that are ordered in terms of increasing diversity are difficult to visualize.

Because the diversity literature has devoted little attention to these kinds of elemental questions, the construct of diversity is murky. The field needs a deeper understanding of the meanings(s) of within-unit differences (Lawrence, 1997). Scholars lack a shared terminology or typology to compare their conceptualizations of within-unit differences. We present such a typology of diversity below. We believe it has the potential to aid scholars in refining their theoretical propositions, in matching their operationalizations to their constructs, and in integrating their research findings.

A DIVERSITY TYPOLOGY: *SEPARATION, VARIETY,* AND *DISPARITY*

We start with a brief example to juxtapose and preview the distinctive nature of each diversity type. Consider three research teams. Each team is studying how patients experience medical treatment in hospitals. Each team consists of eight members. Members of Team S differ in their attitude toward a particular research paradigm. Half of the team's members revere richly descriptive, interpretive inquiry; the other half disparage it. The members of Team V differ in their disciplinary backgrounds. One is a psychologist, another is a human factors engineer, and the others include a microeconomist, sociologist, anthropologist, linguist, hospital administrator, and practicing physician. Finally, the members of Team D vary in their research eminence or rank. One member of the team is a highly accomplished professor who is renowned for having formulated seminal theories of patient interactions with health care professionals; the other members of the team are getting their first behavioral science research experience.

Diversity is obvious within each team. Yet the content and likely outcomes of diversity differ across the teams. In Team S, diversity in team members' endorsement of qualitative research reflects *separation:* team members hold opposing positions on a task- or team-relevant issue. In Team V, team member diversity in disciplinary background reflects *variety:* together, team members bring a multiplicity of information sources to bear on the research question. In Team D, diversity is associated with *disparity:* one member of the team is superior to the other team members in research expertise, and presumably in status as well. The three teams not only differ in the type of diversity they represent but also in the attribute of diversity present in each team (attitude toward qualitative research, disciplinary background, and member prestige).

Figure 1 provides a graphic illustration of these three types of diversity, and Table 1 summarizes key differences among the types. In describing each type below, we highlight the key assumptions that investigators implicitly or explicitly make when studying each one. They deal with (1) the meaning and extent of diversity within units, (2) between-unit variance in the amounts of within-unit diversity, and (3) the correlates and consequences of between-unit variance in within-unit diversity. We clarify these fairly complex assumptions for each diversity type. Further, we describe the nature of minimum, maximum, and moderate diversity

FIGURE 1
Pictorial Representation of Types and Amounts of Three Meanings of Within-Unit Diversity

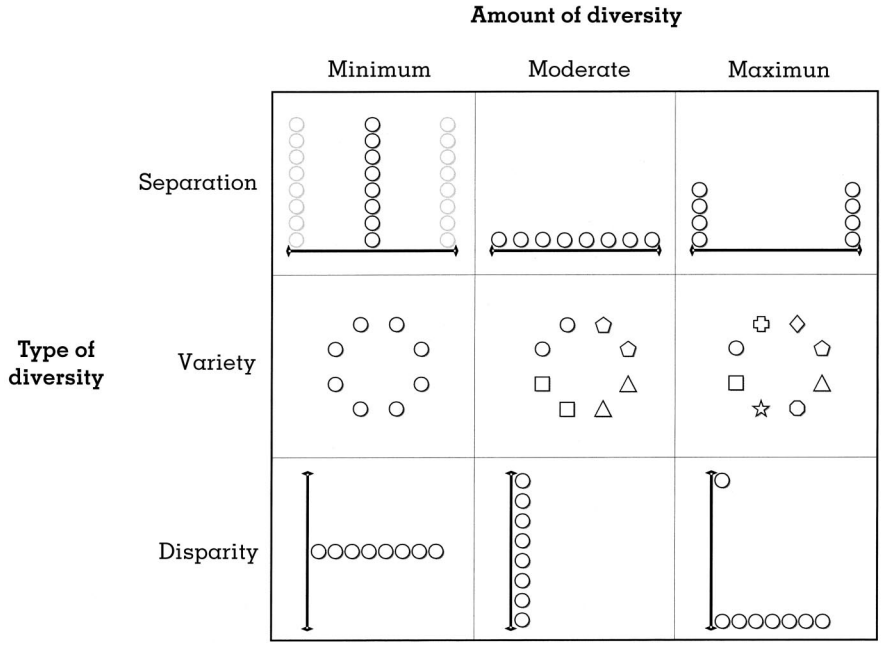

TABLE 1
Meanings and Properties of Within-Unit Diversity Types

Diversity Type	Meaning and Synonyms	Attribute Shape at Maximum Diversity	Attribute Examples	Predicted Outcomes[a]	Foundational Theories
Separation (on attribute S)	Composition of differences in (lateral) position or opinion among unit members, primarily of value, belief, or attitude; disagreement or opposition	*Bimodal* distribution, with half of unit members at highest and lowest endpoints of S *continuum*	Opinions, beliefs, values, and attitudes, especially regarding team goals and processes	Reduced cohesiveness, more interpersonal conflict, distrust, decreased task performance	Similarity attraction; social categorization; attraction, selection, and attrition (ASA)
Variety (on attribute V)	Composition of differences in kind, source, or category of relevant knowledge or experience among unit members; unique or distinctive information	*Uniform* distribution, with even spread of members across all possible *categories* of V (no continuum)	Content expertise, functional background, nonredundant network ties, industry experience	Greater creativity, innovation, higher decision quality, more task conflict, increased unit flexibility	Information processing; law of requisite variety; variation, selection, and retention (VSR)
Disparity (on attribute D)	Composition of (vertical) differences in proportion of socially valued assets or resources held among unit members; inequality or relative concentration	*Positively skewed* distribution, with one member at highest endpoint of D *continuum* and others at lowest	Pay, income, prestige, status, decision-making authority, social power	More within-unit competition, resentful deviance, reduced member input, withdrawal	Distributive (in)justice and (in)equity; status hierarchy; tournament; social stratification

[a] Generally, but not in all diversity conceptualizations or studies.

amounts for each type. Finally, we note examples from the literature of theoretical and empirical analyses consistent with each diversity type. In choosing examples, we have temporarily excluded those involving organizational demography, precisely because demographic diversity within a unit may be conceptualized as separation or variety or inequality. We argue that this uncertainty contributes to the difficulty in conceptualizing and testing diversity's effects. Accordingly, a discussion of alternative conceptualizations of demographic differences as separation, variety, or disparity follows our initial presentation of each diversity type.

Separation

Key assumptions. Many hypotheses or theories about diversity propose that (1) within units, members differ from one another in their position along a single continuous attribute—a lateral continuum S (e.g., positive affect, perceptions of leader charisma, organizational commitment); (2) units differ in the extent to which their individual members are colocated along S—in some units, members are close to one another, but in other units, members are more widely spread; and (3) differences among units in the extent to which their members are dispersed along S lead to a set of systematic consequences (e.g., higher or lower cohesion). In our lexicon, theories and studies of this type rest on an idea of diversity as *separation*. McGrath, Berdahl, and Arrow's (1995) description of VBA (value, belief, attitude) diversity is generally consistent with the idea of diversity as separation, as is the notion of value diversity (Williams & O'Reilly, 1998). Typically, theorists and researchers who examine separation also assume that this diversity type has symmetric effects. That is, homogeneity on S is often predicted to be beneficial whether all members are high on S or all members are low on S.

Minimum, maximum, and moderate separation. Row 1 of Figure 1 depicts minimum, moderate, and maximum separation within a unit. Minimum separation occurs when all of the members of a unit occupy the same position at any location along the S continuum. In some research areas, minimum separation might be referred to as perfect agreement within the unit (James, Demaree, & Wolf, 1993). *Minimum sepa-*

ration can happen anywhere on the continuum of interest. Number theory, however, shows that *maximum separation occurs only when unit members are equally split and at opposing endpoints of the S continuum* (Harrison & Sin, 2006). That is, the utmost separation occurs when there are two (and only two) staunchly divided but balanced blocs within a team, each holding a position on S as far from the other as possible. Team S, above, shows maximum separation along the continuum of "attitude toward interpretive research methods." Moderate or limited separation occurs when unit members show some, but only some, spread or disagreement along the continuum. Perhaps most unit members occupy the same position, and only a few hold differing positions. Or perhaps unit members are uniformly spread across the continuum, as Figure 1 shows (middle cell of first row).

Diversity as separation in theory and research. Theories of similarity attraction (Byrne, 1971; Clore & Byrne, 1974; Newcomb, 1961), social identity and self-categorization (Hogg & Terry, 2000; Tajfel & Turner, 1979), and attraction-selection-attrition (Schneider, 1987; Schneider & Goldstein, 1995) are invoked most often for diversity as separation. Investigators adopting these arguments posit that greater similarity—reduced separation—yields higher levels of cooperation, trust, and social integration (e.g., Locke & Horowitz, 1990). Conversely, diversity scholars often draw on these theories to posit that units whose members differ markedly on a continuum will experience low cohesion, high conflict, high rates of withdrawal, and poor performance (e.g., Tsui, Ashford, St. Clair, & Xin, 1995). For example, Harrison et al. examined the consequences of team members' diversity in task meaningfulness and outcome importance, positing that "people find it more pleasurable to interact with others who have similar psychological characteristics, because that interaction verifies and reinforces their own beliefs, affect, and expressed behaviors" (2002: 1031).

Minimum separation is thus likely to be psychologically comforting to unit members with regard to S. No one challenges anyone else's position on the S continuum, because each of their positions is equivalent. As many have noted, this kind of attitudinal or psychological conformity on S may cause individuals to assume that they are not only similar on S but similar in other ways as well (Janis & Mann, 1977; Nemetz & Christensen, 1996).

Few diversity theorists have addressed the shape and likely consequences of maximum separation. When separation is at its maximum, unit members are, by definition, polarized on S. The unit comprises two extreme and opposing factions. If the diversity attribute is of central importance to team identity and task completion, then a unit's social network is also likely to bifurcate into two dense clusters or cliques, with few or no team members bridging the structural hole between them. Gibson and Vermeulen's discussion of subgroups within teams is consistent with this notion: "Members of a subgroup may . . . cohere and share opinions more often within the subgroup than with others, which may lead to irritation in the team and disputes between the different factions" (2003: 203).

Variety

Key assumptions. In a second approach to within-unit diversity, theorists and researchers assume that (1) within units, members differ from one another qualitatively—that is, on a categorical attribute V (e.g., functional background, source of external information); (2) units differ in the extent to which their members are evenly spread across all the categories of V; and (3) differences between units in their relative spread or diversity on V will be associated, usually positively, with vital unit consequences (e.g., problem-solving or group decision quality, firm performance). Symmetry or asymmetry with respect to attribute V is a nonissue; V has no high or low. Instead, the distribution of V is assumed to indicate *variety:* the number and spread of "batches" of information content, experience, or unique network ties available across unit members. Variety broadens the cognitive and behavioral repertoire of the unit. McGrath et al. (1995) borrow from human resources management in referring to one version of variety as KSA (knowledge, skill, and ability) diversity. Blau (1977) originally termed a form of this diversity type *heterogeneity,* but that term itself has gained a variety of meanings in the literature (Lau & Murnighan, 1998). Others (e.g., Jehn et al., 1999; Williams & O'Reilly, 1998) refer to a similar concept as information diversity. Miner, Haunschild, and Schwab call this type "categorical variability" (2003: 790).

Minimum, maximum, and moderate variety. As with the other types of within-unit diversity, minimum variety is straightforward. It occurs when all members belong to the same category of attribute V (see row 2 of Figure 1). Using communication theory terms, such members are redundant in that there is no information gained by adding more persons to the unit who occupy the same V category (Shannon, 1948). Maximum variety is the more interesting case. It is the richest possible distribution of information, when *each* member within a unit comes from a *unique* category of V. These lower and upper bounds of variety connect to how a number of researchers refer to "perfect homogeneity" or maximum heterogeneity within a unit (e.g., Priem, 1990). The hospital researchers in Team V have maximum heterogeneity or variety for scholarly background; each member represents a distinct scientific field.

The distinction between minimum and moderate variety is fairly stark. The latter requires at least one member to come from a different category on attribute V than all the other members. That first, unique individual with respect to V brings the biggest step up or the largest marginal increase in information for the unit (Shannon, 1948). From a variety viewpoint, the "odd person out" with respect to V is the most crucial. Note that because there are only two categories, a *dyad can have only minimum or maximum variety*, but not moderate variety (a dyad *can* have moderate separation and moderate disparity). Hence, the study of diversity as variety is fundamentally altered for units with two versus more than two members. A more extreme view (Harrison & Sin, 2006) would be that any type of diversity is undefined for dyads because there is only a single difference—no *distribution* of differences—between members.

Diversity as variety in theory and research. Most formulations of diversity as variety are consistent with the idea that an organizational unit is an information processing instrument for the organization (Hinsz, Tindale, & Vollrath, 1997). The unit senses, evaluates, and responds in ways that are designed to be adaptive to the environment. Based on well-known axioms in information processing or cybernetic theory (law of requisite variety; Ashby, 1956), population ecology, and even human cognition theory (variation and selective retention; Campbell, 1960), the fundamental idea is that teams in organizations can translate greater information richness within a unit into better choices, plans, or products. Units whose members draw from different pools of informational resources—their knowledge, functional background, experience, or range of external social ties (e.g., Argote & Ingram, 2000; Austin, 2003; Finkelstein & Hambrick, 1996)—will make more effective decisions and deliver more creative products than units whose members draw from the same pool of resources (Jackson, May, & Whitney, 1995). In fact, Carpenter describes this type of diversity as "sociocognitive horsepower" (2002: 280). Members with diverse kinds of human capital or access to different sources of data (Hambrick & Mason, 1984; Marsch, 2002; Wiersema & Bantel, 1992) collectively serve as a team's lens, each filtering unique environmental cues and interpreting them for the rest of the unit's members. Similarly, units whose members have nonredundant (i.e., nonoverlapping) external network ties have access to information that other units, lacking in such variety, cannot easily obtain (Austin, 2003; Beckman & Haunschild, 2002). Units whose members bridge structural holes in an interunit network are thus likely to be more creative and productive (Burt, 2002; Hansen, 1999; Reagans & Zuckerman, 2001). As Ferrier describes it: "By way of greater awareness in sensing strategic problems, heterogeneous teams can match complex competitive challenges and uncertain contexts with a requisite level of cognitive and experiential variety" (2001: 858).

When the within-unit distribution of V is at its maximum, "everybody is different, and everybody has a unique viewpoint to offer" (Gibson & Vermeulen, 2003: 208). When maximum variety is present, members may be quite open and receptive to one another's views. Because each unit member is different from everyone else, unit members cannot form coalitions with like others; they have to reach across category boundaries to coordinate and connect. In contrast, moderate variety, evidenced by the presence of substantial overlap in some but not all members' knowledge, may lead to problems of "unshared information" (Gruenfeld, Mannix, Williams, & Neale, 1996; Stasser, Vaughan, & Stewart, 2000). Members may fail to discuss information not shared by all or the majority of the group.

Disparity

Key assumptions. In the organizational literature, conceptual and empirical treatments of diversity as separation or as variety are relatively common. Treatments of diversity as *disparity* are not. They are more common and longstanding in sociology, where the term *inequality* reigns (Blau, 1977). We forward disparity as a different term to clearly distinguish our within-unit discussion from the dominant focus of sociological studies on distributions of income across entire populations. In developing and testing hypotheses regarding the effects of within-unit diversity as disparity, theorists and researchers focus on a socially valued or desired resource D (e.g., pay, power, prestige, status); more of D is always better. Disparity-based research assumes that (1) within units, members can differ in the extent to which they hold or receive a share, amount, or proportion of D; (2) units differ in the extent to which D is distributed among or possessed by their members—in some units members have equal shares of D, but in other units one or a few members hold a disproportionate share of D relative to other unit members; and (3) differences among units in the extent to which their D is distributed equally among unit members lead to predictable and important consequences (e.g., fewer member expressions of voice).

A disparity conceptualization also involves one more assumption that the direction of difference along the D continuum matters. Disparity is *asymmetric*. This asymmetry assumption is nonintuitive. Because disparity describes the relative distribution of a valued asset or resource, disparity is high if 10 percent of a unit's members "own" a great deal of D (e.g., prestige or pay) while 90 percent of unit members have very little. Disparity is low, however, if 90 percent of a unit's members own a great deal of D while only 10 percent have very little. In the first case, 90 percent of the unit's members are disadvantaged relative to the privileged few. In the second case, only 10 percent of the unit's members are disadvantaged relative to the overwhelming majority.

Minimum, maximum, and moderate disparity. Row 3 of Figure 1 depicts minimum, moderate, and maximum disparity within a unit. Minimum disparity occurs when all of the members of a unit occupy the same position. Minimum disparity is member parity with respect to D. Maximum disparity, however, occurs *when only one unit member outranks all others*—that is, when one unit member's level of D is at the top of the continuum and all other members' levels are at the bottom. Research Team D, studying patients' treatment experiences in hospitals, exhibits maximum diversity. There is one veteran researcher accompanied by seven rookies. Allison aptly described maximum disparity as "one individual has everything and everyone else has nothing" (1978: 869). Moderate or limited disparity occurs when unit members show some, but only some, differences along the continuum defined by the valued resource. Some members outrank and outclass the others, but differences among unit members are compressed. Moderate disparity is of focal interest in some areas of sociology (Homans, 1961; Phillips & Zuckerman, 2001) and social psychology (e.g., Berkowitz & McCaulay, 1961). Those in the middle of D conform more readily to unit norms than those at high and low ends (although the latter segments have different reasons for nonconformity).

Diversity as disparity in theory and research. Disparity (inequality) in asset, resource, or valued good distribution is a central pattern in sociological theories of stratification (Grusky, 1994). Although inequality of valued resources is also typical in organizational units, theories and investigations addressing diversity as disparity in organizations are surprisingly rare. The clearest examples emerge from the literature on pay dispersion (Bloom, 1999). As Bloom and Michel explain, "More dispersed pay structures concentrate pay among fewer employees at the top . . . thereby providing relatively rich rewards for these employees and relatively poor rewards for the rest" (2002: 33). Building on theories of relative deprivation (e.g., Deutsch, 1985) and tournament compensation (e.g., Lazear, 1995; Lazear & Rosen, 1981), researchers commonly predict that status, power, or pay disparity incites competition, differentiation, and (resentful) deviance among some unit members (e.g., Bloom, 1999; Homans, 1961; Pfeffer & Langton, 1993; Siegel & Hambrick, 2005). Disparity might also foster conformity, silence, suppression of creativity, and withdrawal (Hollander, 1958; Pfeffer, 1998; Pfeffer & Davis-Blake, 1992).

A conceptualization of diversity as disparity is also apparent in theory and research addressing status and power hierarchies in work units

(for some of the foundational theories, see Phillips & Zuckerman, 2001). When disparity in a group is at its maximum, one member of the unit outranks all others. He or she holds the lion's share if not all of a valued unit resource. Eisenhardt and Bourgeois' (1988) study of top management team (TMT) strategic decision-making processes provides an example. When a CEO's power far exceeded that of other TMT members, creating high power disparity in the team, the CEO was likely to engage in "tactics for controlling and withholding information," and the other executives in the team were likely to engage in "alliance and insurgency behaviors" (1988: 743). Ultimately, marked disparities in team member power diminished team performance by distracting team members from key tasks and interrupting the flow of information. These team-level observations are corroborated by research documenting behaviors when individuals are located at (dis)advantaged or disparate status positions in teams (e.g., Berger, Rosenholtz, & Zelditch, 1980; Cohen & Zhou, 1991; Lefler, Gillespie, & Conaty, 1982). As Keltner, Gruenfeld, and Anderson summarize, "High-power individuals talk more, interrupt more, are more likely to speak out of turn, and are more directive of others' verbal contributions than are lower-power individuals" (2003: 277).

Finally, social network analysis provides another intriguing link to this diversity type. If the valued resource, D, is *social* capital, the structure of a network might illustrate disparity. Social capital is accessed and conveyed through interpersonal ties (Adler & Kwon, 2002). When a unit's network structure is highly centralized, network ties are unevenly distributed. Only one or a few members are highly central and, thus, highly influential. The other unit members are on the periphery of the network, with few or even no links to other unit members. Centralization may thus "be viewed as a measure of how unequal the individual actor values are" (Wasserman & Faust, 1994: 176). Suppose knowledge of task process is conceptualized as a valued resource, D (a form of expert power; French & Raven, 1959), and it is held by a single person. The unit therefore has maximum disparity. Such a condition might translate into a social network with maximum centralization, in which unit members build ties or turn to only that person for advice.

Implications of the Diversity Types for Theory Building

The three diversity types are fundamentally distinct. Separation describes differences among unit members in their position on a horizontal continuum. Variety describes differences among unit members from different categories, reflecting access to unique sources of knowledge. Disparity describes differences among unit members in their portion of a valued resource. Separation thus reflects stand point or *position:* the distribution of where members stand on a value, belief, attitude, or orientation. Variety reflects *information:* the distribution of what each unit member knows that is unique from other members, as a function of the distinct content of his or her education, training, or experience. Disparity reflects *possession:* the distribution of how much of a socially valued commodity each unit member has.

The three diversity types also differ in their relevance to key theoretical perspectives and are commonly (but not necessarily) associated with different outcomes. These distinctions are obscured when researchers and theorists define diversity loosely or not at all. Conversely, explicit reference to diversity types should sharpen researchers' predictions, requiring the adoption, explanation, and justification of a specific conceptualization. Further, explicit reference to diversity types allows scholars to contrast and debate their views; they will have a common language to capture their convergent or divergent ideas. Finally, explicit reference to diversity types paves the way for researchers to address the potentially interactive effects of separation, variety, and disparity, a point we return to in the final section of the paper. Accordingly, we propose the following.

> *Guideline 1: Theory building regarding diversity is enhanced by authors' explicit specification and justification of the diversity type of interest: separation (S), variety (V), or disparity (D).*

Despite distinctions among their meanings, there is little to distinguish the three types of diversity when each is minimized (see Figure 1). All members within a unit hold the same value of a variable, regardless of what the variable represents. The three diversity types are strongly differentiated, however, by their dis-

tinctive shape and meaning under maximum diversity.

As shown in row 1 of Figure 1, maximum separation occurs when a unit is divided into two divergent camps. As separation increases from minimum to maximum, unit members grow increasingly polarized in their placement along a continuum. Were a researcher studying other types of diversity, however, the same distribution would be indicative of modest variety (only two of a possible eight categories are present) or of medium disparity (50 percent of the unit are "haves" and 50 percent are "have nots"). Maximum variety, shown in row 2 of Figure 1, occurs when a unit is composed of members who each represent a different category. As variety increases from minimum to maximum, unit members grow increasingly differentiated in their knowledge, experience, or perspectives; they occupy distinct information categories within the unit. Were those eight categories reoriented as points along a continuum, however, the same distribution would indicate only modest separation or modest disparity. Distance among the unit members, which is part of the evidence for either separation or disparity, is limited. Finally, maximum disparity is evident when a single (upper echelon) member towers over all other (lower echelon) members in a unit, as shown in row 3 of Figure 1. As disparity increases from minimum to maximum, the concentration of a unit's resource in a single member grows disproportionately.

In contemplating these maxima, scholars may gain a new and deeper appreciation of the meaning of *unit* diversity. Attention shifts from a consideration of isolated differences among the members of dyads within a unit to a consideration of the pattern of differences within the unit *as a whole*. Maximum separation does not simply mean that unit members are quite different from one another; it means that they are polarized into opposing subunits. Maximum variety means that each member is one of a kind. Maximum disparity means that power, status, or other valued resources are grossly unbalanced.

We see the possibility of new theoretical propositions and hypotheses as scholars build on these insights. Perhaps maximum separation leads to strong *subunit* identification and weak *unit* identification (Gibson & Vermeulen, 2003). In units with maximal separation on an important team-relevant attribute, members are likely to have tight interpersonal bonds within their subunit and antipathy toward those in the opposing subunit. Perhaps maximum variety does not lead to conflict, as is sometimes predicted (e.g., Jehn et al., 1999; Pelled et al., 1999), but to openness toward other ideas, since *no one shares the same idea*. These conjectures lead us to suggest the following.

> *Guideline 2: Theory building about diversity is enhanced by a careful visualization of the shape and consequences of maximum separation, maximum variety, or maximum disparity. In contemplating these maxima, scholars shift their focus from differences within dyads to the pattern of differences within the unit as a whole.*

Implications for Theories and Evidence About Demographic Diversity

In some areas of research, the conceptualization of diversity as separation, variety, or disparity is already quite clear (cf. Bloom, 1999). In others areas it is much less so. An important—even dominant—case under the latter condition is investigation of demographic diversity. The demographic variables most frequently included in diversity studies are age, sex, race/ethnicity, organization and team tenure, education level, educational content, and functional background (Jackson et al., 2003; Ragins & Gonzalez, 2003; Williams & O'Reilly, 1998). The last two on this list—educational content (major or specialty) and functional background—seem to be obvious forms of diversity as variety. These two attributes capture qualitative differences in the kinds of information held by unit members. But within-unit diversity with respect to each of the other demographic attributes may be meaningfully conceptualized as separation *or* as variety *or* as disparity. Uncertainty regarding the precise meaning of tenure, age, gender, and race/ethnicity differences within a unit has, we believe, compounded the challenge of conceptualizing and testing diversity effects (Priem, Lyon, & Dess, 1999).

Tenure is a noteworthy and often studied example (Pfeffer, 1983). Researchers might argue that tenure diversity within a unit is best conceptualized as separation; the less separated team members are along the tenure continuum,

the more likely they are to have similar attitudes, beliefs, and values, to be drawn to one another, and to identify with one another. O'Reilly, Caldwell, and Barnett have posited that "similarity in time of entrance into the group may facilitate both attraction and interaction" (1989: 33). Alternatively, tenure diversity might be conceptualized as variety. In this view, teams that vary in tenure include members of differing cohorts who thus differ in their experiences, their information bases, and their internal and external network ties (e.g., Ancona & Caldwell, 1992; Hambrick et al., 1996). Finally, tenure diversity might be conceptualized as disparity (e.g., Tsui, Xin, & Egan, 1995). Because individual tenure may be positively associated with status or authority within a team (e.g., Drazin & Rao, 1999), tenure diversity within a team may result in empowerment (access to valued resources) of the team's long-entrenched elites and disempowerment of the team's initiates.

Gender diversity might also be conceptualized as separation, as variety, or as disparity. It does not fall along a continuum. But if gender is instead treated as a salient marker or a symbol for a status continuum or for task preferences within a unit (Konrad & Gutek, 1987; Ragins & Sundstrom, 1989; Ridgeway, Johnson, & Diekema, 1994), each of the other conceptualizations of diversity appears plausible. Scholars implicitly conceptualize gender diversity as separation when they suggest that (1) it reflects a distribution of *opposing beliefs* about the appropriateness of critical team processes or outcomes, (2) it is negatively related to cohesion and identification within a unit, and (3) these effects are symmetric such that gender diversity has comparable effects when a unit is numerically dominated by men or by women. In suggesting that men and women have qualitatively *different caches of knowledge* such that gender diversity within a unit may spark creativity and innovation, scholars instead invoke gender diversity as variety (e.g., Wood, 1987). Finally, in highlighting *power differences* between men and women and the asymmetric consequences of within-unit gender diversity, scholars describe gender diversity as disparity (e.g., Cohen & Zhou, 1991; Linnehan & Konrad, 1999; Ragins & Sundstrom, 1989; Tsui, Egan, & O'Reilly, 1992). Indeed, Konrad has proposed this conceptualization over a conceptualization of gender diversity as separation or variety: "Scholarship making arguments that relationship difficulties between identity groups are caused by misunderstandings due to cultural differences while downplaying the effects of prejudice and discrimination denies the everyday inequalities experienced by disadvantaged identity groups" (2003: 11).

Each of these examples still begs a general question: Absent a deductive theory, if a demographic variable distributed within a unit can indicate any diversity type, what meaning should scholars impute for it? In short, which type is right? We believe that this depends, in part, on unit members' *context-dependent* interpretations of the variable in question. Thus, the meaning of within-unit diversity in demographic attribute X is likely to be be shaped by the unit's primary purpose or superordinate goal and unit members' beliefs regarding the association between demographic attribute X and deeper-level attributes (see Harrison et al., 1998).

Consider the following contexts for age diversity. In employee advisory committees for firm retirement benefits, member age might covary with self-interest in particular policies. Further, members' implicit theories of age may include this link, leading age diversity to operate as separation. In teams of software engineers assembled to solve problems in a firm's information systems architecture (e.g., Year 2000 problems), age might covary with a particular "legacy" versus "object-oriented" programming orientation, and team members should recognize it. Here, age diversity might be taken to mark variety. In units such as orchestras, law enforcement squads, or student project teams, older members (not just longer-tenured ones) might be seen as possessing higher levels of task-relevant experience, tacit knowledge, or street smarts. Age would thus be associated with status, and diversity in age could be treated as disparity.

Parallel arguments can be made for within-unit diversity in education level, race, or ethnicity as reflecting each of the three diversity types (e.g., Watson, Kumar, & Michaelson, 1995; see Ragins & Gonzalez, 2003, for a review). Because demographic variables are the most commonly studied vehicles of diversity, but perhaps the least well connected to any of the three diversity types, we offer the following recommendation.

Guideline 3: In cases for which diversity of unit members on the same characteristic (e.g., tenure) may be meaningfully conceptualized in different ways—that is, as separation, as variety, or as disparity—precise specification of diversity type is essential. It allows theorists to differentiate and compare conceptual models, facilitating understanding and cross-fertilization and paving the way for empirical tests of contrasting conceptions.

METHODOLOGICAL IMPLICATIONS OF THE DIVERSITY TYPOLOGY: LINKING THEORY ABOUT DIFFERENCES TO METHOD

The diversity typology also has implications for research design. Overlooking or blurring the distinctions among the diversity types can lead to theoretical confusion. It can also lead to methodological errors and mistaken research conclusions. Below we explain the appropriate operationalization for each type of diversity (see Table 2). We note the consequences of conceptualizing one diversity type while operationalizing another, discuss whether and how to use measures of "overall" diversity and "perceived diversity," and describe the sampling schemes that are needed to fully test theories of every diversity type.

Operationalizing Separation

Standard deviation (SD). Because of its symmetric nature, separation on variable S is best indexed at the unit level by cumulating absolute or squared distances between pairs of individuals. Within-unit SD reflects such cumulative distances, and hence requires interval or better scales, for the S continuum. If an organizational scholar were interested in separation of members' attitudes about qualitative research in the medical research team described above, SD would be a viable choice. Note that in this context, SD describes within-unit diversity as a sample value; it does not estimate a population parameter. Hence, its denominator contains n and not $n - 1$.

SD is maximized under the extreme bipolar distribution shown in the first row of Figure 1, where half of the members within a unit are "stacked" at the lower bound of S (point l) and half are stacked at the upper bound (point u). The SD equals $(u - l)/2$ under such conditions of maximum separation. If, for example, variable S consisted of a seven-point continuum that ranged from $l = 1$ to $u = 7$, then the maximum SD would be 3. It would occur when half the unit's members were located at 1 and half at 7 (the same maximum would be obtained if l were -3 and u were $+3$; changing the scale by adding or subtracting a constant would not change the SD).

Unlike some other diversity measures, maximum SD does not increase with the size of a unit or team; larger n's do not create larger estimates of within-unit diversity. However, SD has the same (interval-level) metric as the original attribute S. One of its disadvantages, therefore, is that it cannot be readily compared across differ-

TABLE 2
Operationalizations of Within-Unit Diversity Types

Diversity Type	Index	Formula	Minimum to Maximum	Assumed Scale of Measurement
Separation (on attribute S)	Standard deviation	$\sqrt{[\Sigma(S_i - S_{mean})^2/n]}$	0 to $[(u - l)/2]$	Interval
	Mean Euclidean distance	$\Sigma\sqrt{[\Sigma(S_i - S_j)^2/n]}/n$	0 to $[(u - l)/\sqrt{(2)}]$	Interval
Variety (on attribute V)	Blau	$1-\Sigma p_k{}^2$	0 to $(K - 1)/K$	Categorical
	Teachman (entropy)	$-\Sigma[p_k \cdot \ln(p_k)]$	0 to $-1 \cdot \ln(1/K)$	Categorical
Disparity (on attribute D)	Coefficient of variation	$\sqrt{[\Sigma(D_i - D_{mean})^2/n]}/D_{mean}$	0 to $\sqrt{(n - 1)}$	Ratio
	Gini coefficient	$(\Sigma\lvert D_i - D_j\rvert)/(2 \cdot N^2 \cdot D_{mean})$	0 to $1 - (1/n)$	Ratio

Note: For separation (S) and disparity (D), the diversity attribute is continuous and can range from a lower bound of l to an upper bound of u. Theoretically, l can be $-\infty$ for separation attributes and (commonly) 0 for disparity attributes, while u can be $+\infty$ in either case. Operationally, l and u are limited by the instrument used to measure the attribute in question. For variety (V), the attribute is nominal or discrete. It can take $k = 1, \ldots K$ possible categories.

ent separation variables. Relative amounts of diversity on, say, team members' protestant work ethic cannot be put side by side with their attitudes toward their supervisor, if the protestant work ethic measure ranges from 1 to 7 and the attitude toward supervisor measure ranges from 1 to 5.

Mean Euclidean distance. Within a unit, the Euclidean distance of one member, *i*, from all the other members, *j*, is the root mean squared distance between each of those *i,j* pairs on attribute S: $\sqrt{[\Sigma(S_i - S_j)^2/(n)]}$ (Tsui et al., 1992). Total Euclidean distance is the sum of Euclidean distances for all *n* unit members. The maximum (team-level) Euclidean distance is $\sqrt{[(n - 1)(u - l)^2/n]}$. For our polarized team S, the maximum is 5.61.

Because this—or any other diversity measure summed over all possible dyads—increases with team size, we recommend use of an average Euclidean distance, which has a maximum value of $(u - l)/[\sqrt{(2)}] = 4.24$. That formula has a very similar structure to the maximum SD formula: $[(u - l)/2]$. Befitting proper indexes of separation, both average Euclidean distance and SD reach their peak under the same conceptual conditions of maximum separation—a bimodal distribution with the modes occurring on both endpoints of the S continuum. The Euclidean distance index shares a weakness with SD in that it also cannot be compared across variables with different metrics. Given their conceptual and mathematical similarities, there is no particular advantage of either operationalization over the other, save for researcher familiarity with SD (see Bedeian & Mossholder, 2000).

Operationalizing Variety

Blau's index. Continuous distances are not meaningful under a conceptualization of diversity as variety; qualitative *distinctions* are. It is through the spread of members across qualitatively different or novel categories that the cognitive and behavioral repertoire of a unit is presumed to increase. When variable V is dispersed across members who might be in one of $k = 1, \ldots K$ possible categories, such as the different scientific backgrounds represented by the research team (V) studying hospital patient experiences described above, SD is inappropriate. Euclidean distances are sensible only to the extent that a 0 or 1 "distance" refers to pairs of individuals from the same or different categories, respectively (see Figure 1; Harrison & Sin, 2006). Blau's index (1977) builds on this qualitative difference foundation, and it is the most commonly employed measure for diversity as variety (e.g., Bunderson & Sutcliffe, 2002).

Blau's index is also known as Herfindahl's (1950) index and Hirschman's (1964) index, but it was originally proposed by Simpson (1949) as a measure of species diversity in an ecosystem. Language from the latter domain can be helpful in understanding the meaning of Blau's index scores. Its computational formula is $1 - \Sigma p_k^2$, where *p* is the proportion of unit members in *k*th category. Values of Blau's index can range from zero to $(K - 1)/K$. Its maximum occurs when members of a team, V_k, are spread equally—called "evenness" or relative abundance of species in the ecological literature (Hill, 1973)—over all possible *K* categories—called "richness" of species. Having an even spread of members over the richest number of information sources corresponds well to our definition of maximum variety; evenness and richness contribute to a higher Blau's index. A more statistical interpretation is that Blau's index reflects the chance that two randomly selected group members belong to different categories (tap into different information sources).[1]

Because its maximum is limited by *K* (but less so as *K* gets larger; if $K = +\infty$, the limit would be 1.0), Blau's indexes are also not directly comparable when the number of categories is not the same across diversity variables. For instance, one cannot equate Blau's index for gender (maximum Blau value is .5) with Blau's index for the disciplinary backgrounds in team V (with eight persons spread evenly across $K = 8$ categories, the maximum Blau value is .875). Some might regard this difference in maxima as reasonable; if there are $K = 2$ versus $K = 8$ information categories, there is less potential variety from gender than from disciplinary background. Further, if two groups differ in size but each group shows maximum variety (i.e., in each

[1] Blau's index was originally developed by Simpson (1949) for sampling with replacement from an infinite population. When used to measure diversity within a group, sampling is done with replacement from a finite population, and $1 - \Sigma p_k^2$ might be substituted by $1 - \Sigma[n_k(n_k - 1)/(n(n - 1))]$. In the latter formula, n_k is the frequency of unit members in the *k*th category, and *n* is unit size.

group no two members have the same functional background), there is a potential for more distinct categories to be present in the larger group. Therefore, if one takes Blau's index (or Teachman's, see below) as a literal or "true" value for variety, *maximum possible variety increases with unit size*; there is a "richer" set of possible information categories to draw from. If this is an unpalatable assumption, a way to standardize Blau's index is to divide by its theoretical maximum, yielding the Index of Quality Variation (IQV: Agresti & Agresti, 1978; Mueller, Schuessler, & Costner, 1970). Blau's index and IQV are used in social network research to operationalize availability of unique sources of information or social capital (Marsden, 1990).

Teachman's (entropy) index. The computational formula for Teachman's index (1980; originally developed by Shannon, 1948, in the communications literature) is $-\Sigma[p_k \cdot \ln(p_k)]$, where p is again the proportion of unit members in the kth category. As unit members are spread more evenly and across a richer number of V categories, Teachman's index rises. Its maximum occurs under the same conditions as Blau's index, but it takes a slightly different value: $-1 \cdot \ln(1/K)$. Therefore, Teachman's index is likewise not directly comparable across different V-type variables, as long as each variable has a different total number of categories. It is further limited by the situation described above for Blau's index, when the number of unit members n is less than the possible total number of information categories K. Both indexes have been shown to be part of a general class of diversity or information richness measures that have desirable mathematical properties (Hill, 1973), although Teachman's index always yields a larger number than Blau's. The only advantage one operationalization of variety would have over the other is that Blau's index occupies a somewhat tidier range of 0 to (a value close to) 1.

Operationalizing Disparity

Coefficient of variation. The formula for the coefficient of variation (CV), $\sqrt{[\Sigma(D_i - D_{mean})^2/n]}/D_{mean}$ or, more simply, $SD(D)/D_{mean}$, captures the asymmetry that is fundamental to the conceptualization of diversity as disparity. Disparity reflects both the distances between unit members and the dominance of (concentration of the resources in) those who have higher amounts of attribute D. When a privileged minority holds most of resource D relative to an underprivileged majority, there is greater disparity than when the situation is reversed. Similarly, in the CV, division of the SD by the mean expresses the idea that diversity on a given attribute matters less when resource D is typically high versus typically low (Sorenson, 2002). In the sociology literature, CV is often used as a measure of income inequality (Allison, 1978). There, the logic of dividing the SD by the mean to capture disparity is more obvious. The same amount of variability (say, SD[D] = \$20K) in unit members' income is of less importance when unit members' average income is higher (D_{mean} = \$1M) than when it is lower (D_{mean} = \$40K; Allison, 1978; Sorenson, 2002).

The CV reaches its maximum when $n - 1$ individuals are at the lower bound, l, of a ratio-level continuum (Allison, 1978; Bedeian & Mossholder, 2000; Kimura, 1994). If l is zero, then all members of the unit but one hold *none* of D, and the absolute value of the something held by the nth person does not matter. That sole person has *all* of D in the unit. For example, if "number of refereed journal articles" were the status continuum being studied in Team D, the maximum CV would not change if the single highly regarded and veteran researcher had 1 or 10 or 100 published papers—as long as the lower-ranking novice members all had 0. Under these conditions, the CV is maximized in a way that reflects only within-unit size: $\sqrt{(n - 1)}$ or, in this case, $\sqrt{(8 - 1)} = 2.65$ (Champernowne, 1974).

Because the maximum CV is sensitive to sample size, highly dispersed units with fewer members likely would be regarded as having less disparity than those with more members. One person who has great power (D) over dozens of others is assumed to create more disparity than the individual who has great power over just a handful of others. Martin and Gray (1971) offer a standardizing adjustment for unit size when this assumption is untenable (see Beckman & Haunschild, 2002, for an application to external network ties).

If the lower bound, l, is some number higher than zero, the upper bound, u, does matter. The farther the distance on D that one or a few elite persons are above the rest of the persons within a unit, the higher the CV. The more lopsided the within-unit distribution of D, with more persons at the bottom and a valued resource concen-

trated in a few or one person at the top (see row 3 of Figure 1), the larger the resulting CV value. These properties of CV (and of the Gini coefficient, below) make disparity measures perhaps the most volatile or sensitive of the three types of diversity to the status of a single member. If a situation in which all unit members have none (or equally small portions) of the resource in question changes such that one person now gains a large share, the unit quickly jumps from minimum to maximum disparity.

Gini coefficient. The Gini coefficient or index is used less often in organizational behavior or human resources research than in strategy and organization theory, where it has been borrowed from its widespread application as a concentration ratio in finance and economics. Its computational formula is the sum of all pairwise absolute differences between unit members on variable D, divided by $[2 \cdot D_{mean} \cdot n^2]$; see Table 1. Its maximum value is $1 - (1/n)$. Similar to CV, this maximum occurs when all but one unit member have the lowest possible standing on D. Also as with CV, the Gini index is only appropriate for D attributes that have ratio-level properties (Allison, 1978; Kimura, 1994). Researchers might choose the Gini index over CV if they prefer their diversity measures to follow a common metric, in this case ranging from 0 to (nearly) 1. The maximum value of the Gini index depends on n as well, but it should be less of a limiting factor than for CV when it is used in larger versus smaller groups (see Martin & Gray, 1971, for a possible standardizing correction for n).

On the Folly of Conceptualizing S or V While Operationalizing D

When researchers specify one diversity type but operationalize another, they can draw erroneous conclusions from their analyses. Figure 1 helps to illustrate the point. As noted above, the distribution of member scores or values that indicates maximum disparity is *not* indicative of maximum separation or maximum variety but, rather, of very limited separation or variety. Williams and O'Reilly (1998) report CV to be the most widely applied diversity index in the literature. Yet using CV (an appropriate operationalization of disparity) to assess separation or variety is misleading. Unfortunately, researchers often do just this (e.g., Harrison et al., 1998; Klein, Conn, Smith, & Sorra, 2001; Simons, Pelled, & Smith, 1999; Wiersema & Bird, 1993).

In using CV to operationalize diversity, researchers frequently cite Allison (1978), noting his arguments that the use of CV is metricless and that CV therefore provides a comparable measure of diversity in different attributes (unlike SD or Teachman's index; Sorenson, 2002). However, Allison recommended CV for operationalizing our *disparity* type of diversity. For example, he noted that CV provides a comparable measure of income inequality whether the attribute in question is dollars or yen. In the studies cited above, and in many others, researchers sought to assess either separation (testing ideas based on similarity attraction) or variety (testing ideas based on the leveraging of unique information sources within a unit), but instead assessed disparity. Hence, the conclusions of such research might be incorrect; *the index used was asymmetric but the conceptualization of diversity was symmetric.*

Two examples may be instructive. Suppose that diversity in the variable "commitment to meeting project deadlines" was conceptualized in terms of separation. Also suppose the teams had equal separation; SDs of commitment were the same (SD = 10) in Team S1 and Team S2. But in Team S1 the mean level of commitment was 40 and in Team S2 it was 20. If an investigator used CV as an operationalization of within-unit separation, he or she would mistakenly conclude that Team S2 (CV = .5) had twice the separation as Team S1 (CV = .25).

Suppose that diversity in age was conceptualized in terms of variety: different age cohorts learn and know qualitatively different things that might contribute to a unit. If one member of an eight-person team were relatively old and all the rest young (resulting in a low mean for age), a misapplied CV to member age would yield the conclusion of maximum team variety, but only two "batches" of knowledge would exist. The CV would be nearly minimized if there were one young member and the rest were relatively old (resulting in a high mean for age), but this team would have, as above, just two "batches" of knowledge.

These examples lead us to the guideline below. The basic principle is familiar: *conceptualization must be aligned with operationalization.* Theory must guide measurement, which is nu-

anced for diversity constructs. CV is not a universal diversity index.

> *Guideline 4: The choice of a diversity index should be driven by the theoretical specification of diversity type; researchers must answer what the vital difference is before they choose or design indexes to measure it. If the specified conceptualization and index of diversity are mismatched, research conclusions may be misleading. Researchers specifying diversity as separation should use versions of SD or average Euclidean distance. Researchers specifying diversity as variety should use versions of Blau's or Teachman's (entropy) index. Researchers specifying diversity as disparity should use versions of CV or the Gini coefficient.*

Accounting for the Mean When Testing for Diversity Effects

The only difference between the formulas given above for CV and SD is that CV is a ratio of SD to the within-unit mean. This is more than a statistical quirk; it has significant substantive implications. Thus, it invites a consideration of the role of the within-unit mean in analyses of diversity effects.

The mean specifies the typical location of unit members on an S or D attribute. When separation and disparity attributes have no upper or lower bounds (they can range from $-\infty$ to $+\infty$), the within-unit mean tends to be uncorrelated with within-unit variability (Harrison & Sin, 2006). However, most attributes do have upper and lower bounds in real data. Because the SD of a within-unit distribution is often lower when the mean is near the lower or upper bound (members are clustered near the "floor" or "ceiling"), there may be an artifactual overlap of means and SDs *across* units. In short, mean and SD can be confounded.

Because of that potential confound, what appears to be the effect of within-unit diversity may be the (inverse) effect of the mean instead; the substantive interpretation of the latter effect is entirely different. Suppose, for example, a diversity theory predicts that units with members who are part of more homogeneous (low-variability) tenure cohorts tend to be more socially cohesive and committed to their unit, and therefore will be less likely to quit. The theory predicts a positive relationship at the unit level between tenure diversity and turnover rate. Yet if *lower variability* in tenure was confounded with *higher mean* tenure across units, observing the predicted positive relationship might be attributed to the empirical fact that those with longer tenure (and greater investment with a firm) are simply less likely to leave. Thus, we join others (e.g., Jackson et al., 2003: 808) in urging investigators to include the mean in tests of diversity as separation and disparity.

> *Guideline 5: In testing the relationship between separation or disparity of an attribute and other variables, researchers should first statistically control for the within-group mean of the attribute.*

It might be asserted that because the mean is already in the denominator of the CV formula, if researchers use CV as a disparity index, they will already be controlling for the mean effects mentioned above. However, as Sorenson (2002) shows, the CV ratio does not statistically control for the mean; it forces a particular moderating structure on within-unit data. Such a ratio forces the effect of SD(D) to be tempered or weakened at a rate of $1/D_{mean}$, mandating a SD(D) $\times$ $1/D_{mean}$ interaction. The mean value of D has an effect on the criterion of interest that opposes the effect of variability at a very specific, $1/D_{mean}$ rate. This mandated form of interaction in disparity measures is also a testable assumption. Researchers could enter both the SD(D) and $1/D_{mean}$ in hypothesis testing, similar to the suggestion in Guideline 5. That is, in predicting unit turnover rate, *Y*, from disparity in tenure, the first regression model would be

$$Y = \beta_0 + \beta_1[\text{SD(Tenure)}] + \beta_2[1/\text{mean(Tenure)}] + \varepsilon.$$

The second regression model that checks the contribution of the specific functional form of disparity in the CV formula would be

$$Y = \beta_0 + \beta_1[\text{SD(Tenure)}] + \beta_2[1/\text{mean(Tenure)}] + \beta_3[\text{SD(Tenure)} \times 1/\text{mean(Tenure)}] + \varepsilon.$$

The impact of greatest interest to disparity researchers is reflected in the strength of β_3.

> *Guideline 6: The use of common disparity measures carries an implicit assumption about the shape of a negative interactive effect between the variability and the mean of a diversity attribute. That assumption should be tested by entering variability, mean, and the variability-by-mean interaction to see if the former is indeed moderated by the latter.*

Operationalizing Demographic Diversity: Separation, Variety, and Disparity

The two guidelines above argue for a second look at previous studies of demographic diversity. As we have shown, diversity of age, sex, race, tenure, and education can all be, and have been, conceptualized as separation, variety, or disparity. Researchers have often conceptualized one form of diversity (most commonly, separation or variety) but then operationalized another (disparity). There is no post hoc statistical adjustment that can be applied to published findings from such research. Instead, authors would need to revisit their previous work and reanalyze their primary data to match indexes to diversity types. In the absence of such reanalyses, the validity of the conclusions of many specific studies, as well as of the narrative and quantitative reviews of the demographic diversity literature, may be called into question. Given the importance of the topic of demographic diversity within organizations, we hope our observations and guidelines will spur new research, as well as reexaminations of prior research. But the implications of our framework go beyond the sphere of single demographic differences, and we broaden our discussion below.

"Overall" Diversity

Diversity indexes are sometimes cumulated to indicate the "total" amount of dissimilarity, heterogeneity, or difference within a unit—summed over several attributes. That is, researchers might seek to assess overall within-unit diversity by adding or averaging diversity indexes for, say, gender, education, race, and tenure. After doing so, they arrive at a single, global value that characterizes each unit in the sample (e.g., Chatman & Flynn, 2001; Randel & Jaussi, 2003).

For several reasons, we believe that this fusing of diversity indexes for several variables is unwise. First, as we have noted, a unit or team itself does not have diversity (Jackson et al., 2003); an *attribute* of individuals within units has diversity, whether the within-unit distribution of that attribute is thought of as separation, variety, or disparity. Second, it is clear that more diversity on such attributes has a unique meaning for each of the three diversity types. This prohibits summing, say, SD for separation in age with Blau's index for variety in functional background and CV for disparity in tenure. The resulting amalgam has an indefinite interpretation at best. Pitcher and Smith have noted this, stating, "Multiple proxies seem to cancel one another out and almost guarantee nonfindings" (2001: 14). Lau and Murnighan also have warned that such a combination would be "like cross-fertilizing apples and oranges" (1998: 327).

That leaves the possibility of adding several variables that, perhaps together, reflect a single diversity type. For example, if diversity in gender and diversity in ethnic background were both conceptualized as variety, would it be reasonable to sum their diversity indexes and create an overall variety measure? To use the logic of conventional (reflective) measurement, one assumes that different operationalizations are positively correlated, manifesting the same underlying (variety) construct. Still, there is little reason to expect measures of the variety (or separation or disparity) of two independent attributes—such as gender and ethnicity—to be consistently and positively correlated within units. Most diversity theories do not predict such relationships, nor do published correlations among diversity variables reveal convergent validity (e.g., Klein et al., 2001). Hence, we caution against this approach.

It might be counterargued that measures of demographic diversity, such as gender variety and ethnic background variety, serve not as reflective indicators but as "formative" indicators (Bollen & Lennox, 1991; MacCallum & Browne, 1993). As with the variables in a principle component, each formative indicator contributes to a linear composite that is simply the sum of its parts. Diversity variables serving as formative indicators would *not* need to share an underly-

ing construct that positively binds them together (although they would then have a different empirical meaning in every study), nor would they have to be the same diversity type.

However, there are two critical methodological drawbacks to this approach. First, a measure of overall diversity treats the causal force of each component variable as equal (Edwards, 2001), masking effects that might be due mainly to one variable (e.g., gender variety) rather than another (e.g., ethnic background variety). Second, an overall diversity measure masks substantive differences among units that have the same overall composite score. Suppose that one of the medical research teams described above is composed of six whites and two African-Americans, or six African-Americans and two whites. Its Blau index for race is the same in either case. Suppose, further, that the team is composed of six women and two men, or two women and six men. Again, its Blau index for gender is the same in either case. As a result, the team's overall diversity would be the *same* if there were (1) six white men and two African-American women; (2) six African-American men and two white women; (3) six African-American women and two white men; (4) six white women and two African-American men; (5) four white men, two white women, and two African-American men; and so on.[2] Theory and evidence suggest, however, that these groups would differ markedly in their networks, coalitional dynamics, and information sources (e.g., Ibarra, 1993; Mollica, Gray, & Treviño, 2003; Tsui et al., 1992). To treat all of these groups as the same—and we have not listed all possible combinations that would yield the same overall scores—is to introduce a great deal of theoretical ambiguity into one's operationalization of diversity. Thus, we suggest the following.

Guideline 7: Simple (average or total) operationalizations of overall diversity should be avoided unless (a) theoretical motivations for their aggregate (formative) effects are clear, or (b) evidence of their convergent validity can be shown.

Perceived Diversity

Another approach sometimes used to operationalize diversity is to ask individuals how they perceive the diversity variable to be arrayed within their unit (Dooley, Fryxell, & Judge, 2000; Harrison et al., 1998; Harrison et al., 2002; Jehn et al., 1999; Miller, Burke, & Glick, 1998; Turban & Jones, 1988). Such measures are reasonable—even required—when authors seek to test theories specifically addressing *perceptions of differences* (see Riordan, 2000, for a review). Indeed, perceived diversity within a unit may have unique and more proximal explanatory power than actual diversity, as a stream of organizational research suggests individuals' perceptions of their social environment have stronger, more direct influences on behavior than does the social environment itself (Eisenberger, Huntington, Hutchison, & Sowa, 1986; Krackhardt, 1990).

For several reasons, however, measures of perceived diversity are not likely to be construct-valid measures of "actual" diversity (McGrath, 1984). First, individuals may lack the necessary information to accurately assess the diversity of the rest of their unit members, especially on the thornier and perhaps more sensitive psychological characteristics that might have sparked the researcher's move toward using perceptions in the first place. See the low correlations in Harrison et al. (2002) for perceived and actual "deep" diversity, as well as Miller et al.'s (1998) correlations between perceived and actual cognitive diversity. Second, perceived diversity ratings are likely to be biased, relative to measures of actual diversity. On the one hand, attraction and social desirability biases can promote perceptions of greater similarity (less diversity) than actually exists (Clore & Byrne, 1974). On the other hand, theory and research regarding the outgroup homogeneity effect suggest that, under some conditions, ingroup members may overestimate their own unit's diversity. This is particularly likely when

[2] This example recalls Lau and Murnighan's (1998) insightful analysis of group faultlines. The gender and race faultline is stronger in the first four groups specified than in the fifth. The construct of faultline strength, to which we return later in this article, bears some similarity to the notion of overall diversity, although the construct of faultline strength is far more precise and focused. Even so, it has proven challenging to operationalize faultline strength outside of environments such as the laboratory, where individuals can be assigned to groups to create weak versus strong coalignments of differences. Recent developments in the measurement of faultline strength in naturally occurring groups are encouraging (Shaw, 2004) but remain little tested.

judgments are made relative to other units (Lee & Ottati, 1993, 1995; Park & Judd, 1990; Park, Ryan, & Judd, 1992; Quattrone & Jones, 1980). Third, under *either* form of perceptual error, common method bias might inflate the observed correlation of perceived diversity measures and member reports of group outcomes (e.g., group cognition, conflict, performance, etc.; Harrison, McLaughlin, & Coalter, 1996). This renders suspect any comparison of the strength of relationships of perceived diversity relative to actual diversity with such outcomes. Accordingly, we make the following recommendation.

> *Guideline 8: Measures of perceived diversity should not substitute for measures of actual diversity. Measures of perceived diversity can, however, provide an operationalization of a useful, substantive construct—members' perceptions of unit diversity—that may be related to but is different from actual unit diversity.*

Our efforts to distinguish diversity as separation, as variety, and as disparity suggest that if member *perceptions* of within-unit differences serve a theoretical purpose, researchers may need to develop distinct instruments for perceived separation, perceived variety, and perceived disparity. Perhaps a researcher interested in perceived separation in satisfaction with a supervisor might ask, "How much do team members differ in their satisfaction with the team supervisor?" An appropriate response scale might thus be "1 = Not at all; all team members feel the same way about the supervisor"; "3 = Somewhat; some team members are more satisfied with the supervisor than others"; and "5 = A great deal; half of the team's members are very satisfied with the supervisor and the other half of the team's members are very dissatisfied with the supervisor."

A researcher interested in perceived variety of functional backgrounds might ask respondents, "To what extent do group members differ in their functional backgrounds?" An appropriate response scale might be "1 = All group members have the same functional background"; "3 = Some group members' functional backgrounds differ from others' "; and "5 = Each group member has his/her own unique functional background."

Finally, a researcher interested in perceived disparity of team member influence in team decision making might ask, "To what extent do team members differ in their influence over important team decisions?" Here, an appropriate response scale might be "1 = Every member has the same amount of influence"; "3 = Some group members have more influence than others"; and "5 = One team member has substantially more influence than all other members."

The examples above are only suggestions. However, their verbal descriptors map directly onto our diversity typology, as well as onto the minimum, maximum, and moderate levels of those types. Regardless of the specific words used in such perceptual scales, we propose the following.

> *Guideline 9: If researchers use measures of perceived diversity, their questions, response formats, and anchors should reflect the diversity type under consideration, following the distributions shown in Figure 1.*

Sampling the Full Range: Between-Unit Variance of Within-Unit Diversity

The recommendations above are designed to ensure that a researcher's diversity indexes are construct valid, capturing the specific diversity type specified in the theory the investigator is testing. But researchers may still draw incorrect conclusions from their research if their sample of units does not show the full breadth of diversity. To avoid range restriction, researchers seeking to test diversity theories must gather samples in which there is sufficient between-unit variability in diversity to allow effects to be revealed.

The implications of this admonition differ for researchers studying separation, variety, and disparity. Investigators testing the unit-level effects of separation must ensure not only that their sampled units vary in amount of (maximum to minimum) separation but also that sampled units include different combinations that lead to the same amount of separation on S. That is, for strong tests of the assumed symmetric effects of attitude separation on S, a researcher's sample must include some units in which all members have negative attitudes, other units in which all members have positive

attitudes, still other units in which all members have neutral attitudes, and, of course, some units that are widely split on the focal attitude, representing maximum separation.[3] This allows the researcher to assess whether the effects of minimal separation are, in fact, symmetric. Such a test would involve entering main effects of the within-unit SD and mean in an analysis, followed by the SD × mean interaction, reiterating our Guideline 6 above. A significant interaction indicates asymmetric separation effects (i.e., the impact of separation depends on the level of S). See Barsade et al. (2000) for an example.

Researchers testing the unit-level effects of variety require samples that have different amounts of category richness or unevenness across units. Samples must include units in which variety is very low and units is which variety is very high. Without this full sampling, researchers will underestimate relationships between variety and its antecedents or outcomes because of restricted range. Testing the unit-level effects of disparity requires, of course, samples in which units vary from a single individual lording resources over all the others (high disparity) to an even distribution of the resource across members (low disparity). We thus make the following suggestion.

> *Guideline 10: To allow an adequate test of hypotheses regarding separation, variety, and disparity, respectively, a researcher's sample must evidence substantial between-unit variability in within-unit separation, variety, or disparity. Units should represent the full range of minimum to maximum separation, variety, or disparity, respectively. In the specific case of separation, the sample must allow verification of the symmetry assumption fundamental to that diversity type.*

FUTURE DIRECTIONS FOR THEORY AND RESEARCH

By justifying their choice of separation, variety, or disparity, theorists may deepen their understanding of the likely consequences of attribute-specific diversity within units and may refine their predictions. Further, precise specification of diversity types facilitates construct-valid operationalizations and appropriate tests of the effects of each diversity type. The diversity typology we have presented also suggests new avenues of diversity research. In explicating the meaning of disparity, we noted how little research addresses the unit-level consequences of within-unit inequality in power, status, and other valued resources. This is an important and understudied aspect of diversity (Konrad, 2003). We also see real promise in research integrating the study of diversity and social networks (e.g., Reagans & Zuckerman, 2001). Social network analysis may allow researchers to enrich their understanding of the relational processes associated with each diversity type, even allowing a single demographic variable to be associated with more than one diversity type and to have simultaneous, opposing effects (see Reagans, Zuckerman, & McEvily, 2004). Further, we encourage more research on the antecedents of separation, variety, and disparity in organizations. With some important exceptions (e.g., Boone, van Olffen, van Witteloostuijn, & De Brabander, 2004; Klein et al., 2001; Miner et al., 2003; Pfeffer & Davis-Blake, 1990), this territory of research remains largely uncharted.

Finally, as we noted in previous sections, we see both a real need and a real opportunity for research and theory building regarding the relationships among the three diversity types. Given the complexity of this broad topic, we focus on it below, addressing three issues that each touch on and may help to clarify the independent and interdependent nature of separation, variety, and disparity in organizations. More specifically, we consider (1) strategies for disentangling assumptions of demographic separation, variety, and disparity; (2) relationships among and interactive impacts

[3] Racial diversity—conceptualized as separation—may provide a more intuitively obvious example. If a researcher wants to argue that the effects of racial separation are symmetric, he or she needs to show that the effects of homogeneity (minimal separation) are the same regardless of whether the group is all African-American or all white. Further, he or she needs to show that the effects of separation are the same regardless of whether the group is numerically dominated by whites or by African-Americans (by definition, at the point of maximum separation, a team has an equal number of whites and African-Americans).

of diversity types; and (3) multilevel diversity effects.

Disentangling Separation, Variety, and Disparity: One Step Backward and Several Steps Forward for Demographic Diversity Research?

We have urged theorists and researchers to specify their chosen diversity types. But we have also shown that within-unit diversity of several demographic variables, including tenure, age, gender, race or ethnicity, and education, can be meaningfully conceptualized as separation *or* variety *or* disparity. How, then, should scholars interested in demographic diversity proceed?

Our answer is to suggest research designed to test the theoretical assumptions specific to each diversity type. Suppose the demographic attribute in question is tenure. Within units, is tenure significantly correlated with key perceptions, beliefs, attitudes, values, or other vehicles of separation? Or do tenure cohorts vary in their knowledge, experience, or perspective, as suggested by a conceptualization of tenure diversity as variety?[4] Alternatively, is tenure associated with the unequal distribution of power and status, consistent with a conceptualization of tenure diversity as disparity? These are basic questions of construct validity—so basic it is remarkable that, with few exceptions (e.g., Kilduff, Angelmar, & Mehra, 2000), they have received so little attention.

To answer these questions, a researcher must examine the individual-level relationship of the variables *within units*. Suppose a researcher conceptualizes tenure diversity as separation, assuming that tenure is associated with organizational commitment. A *unit-level* test of that assumption would cloud interpretation. A significant unit-level relationship between, say, tenure SD and commitment SD may occur even in the absence of any connection between tenure and commitment within units (Ostroff & Harrison, 1999). Random coefficient modeling (also referred to as hierarchical linear modeling; Hofmann, Griffin, & Gavin, 2000) allows a researcher to simultaneously test within-unit relationships for each unit of his or her sample. Of course, such a test requires careful measurement of demographic attributes and their theoretical sources of diversity (e.g., separation in member attitudes, variety of knowledge, or inequality in prestige).

If this fine-grained, within-unit test reveals that the data for most or all teams in the sample conform to the predictions associated with one diversity type, the researcher has a powerful and empirically grounded foundation for his or her subsequent investigation of the unit-level correlates of attribute diversity of that type. But the results of such a test might be more complex, lending support to more than one diversity type, or revealing predicted relationships of the demographic attribute within some units but not others. The test might even provide no support for any diversity type. The latter result would suggest that diversity of the attribute in question is highly unlikely to have predicted unit-level consequences.

Is such extensive testing really called for, *prior* to the investigator's examination of his or her real interest—the effects of tenure diversity—just because there is uncertainty in the precise conceptualization of it as one of the three archetypes? We think so. The "no support" result is within the realm of possibility given the inconsistent nature of past diversity findings. In the past two decades a wealth of theory and research on demographic diversity has yielded few cumulative or conclusive effects. Researchers can, we believe, resolve some of this uncertainty by stepping backwards, and down a level of analysis, to test the fundamental and distinc-

[4] When conceptualizing tenure as variety, researchers may be tempted to simply divide tenure into convenient subgroupings: zero to five years, six to ten years, etc. But, in fact, this choice warrants careful consideration, since it is not always clear what the cohorts should be that represent different "batches" of knowledge or experience. Cohort definitions should ideally be supported by a conceptualization that specifies why, for example, one to four years of tenure is markedly different from five to eight, or nine to fifteen (or whatever cohort boundaries are chosen). Clear events in a firm or unit, such as before and after a reorganization or acquisition, might support demarcations of tenure cohorts as sources of variety. These arguments are relevant beyond the bounds of demographic research. For example, if political ideology is conceptualized not as a continuous variable from conservative to liberal (engendering potential separation within a unit) but as a source of variety of perspectives within a unit, a researcher faces a comparable puzzle: Where should he or she draw the lines distinguishing those who are very conservative from those who are conservative, those who are moderate from those who are liberal, and so on? Self-identification in one category or another is a reasonable starting point.

tive assumptions underlying diversity as separation, as variety, and as disparity. The payoff from such research will come as researchers then move several steps forward in deciphering the nature and effects of demographic diversity.

Relationships Among and Interdependent Effects of Diversity Types

In describing the meaning, shape, mechanism, and ideal operationalization of each diversity type, we have described them in turn. Yet separation, variety, and disparity are likely to cooccur within units. Indeed, separation, variety, and disparity may, in some cases, be causally related. Further, they may well have joint consequences for unit outcomes. New theory development and research are needed to examine these possibilities. Does within-unit diversity of one type lead to within-unit diversity of other types? Does diversity of one type moderate the effects of diversity of other types? We offer some speculative answers to these questions below, with the hope of sparking researchers' interest in these topics.

Diversity begetting diversity. Although the three diversity types are qualitatively and distinctly different, they may nevertheless be linked to one another over time. Diversity of one type might engender diversity of a second type. We briefly explore a few possibilities.

Separation can engender variety, particularly increases from minimum to moderate variety. If unit members are sharply separated—for example, in their endorsement of a particular unit goal or strategy—they might be motivated to get new information to support their position, including seeking out (external) others who support their own perspective. In this way the members of a subunit may develop network contacts and information not shared by the members of the opposing subunit (Peterson & Thompson, 1997). For example, the members of the subunit of Team S who favor interpretive research may seek out experts in qualitative research in an effort to bolster their own position. Conversely, the members of the subunit of Team S who oppose that research paradigm may seek out experts who are aligned with their own preferences. In both cases the knowledge and argument base associated with each of the factions is likely to increase and to be brought forward to the rest of the unit when discussions about interpretive methods arise. Polarization (sharp separation) of attitudes toward interpretive research may remain, but the variety of research expertise may increase within the unit.

As separation can engender variety, so variety can engender separation. Variety in disciplinary or scientific training might lead to separation in support for qualitative research in Team V for example; some functional backgrounds may be more accepting and supportive of qualitative research than others. This assumption can be seen in research treating variety in functional background as a source of belief and attitude differences in top management teams (e.g., Beyer et al., 1997; Chattopadhyay, Glick, Miller, & Huber, 1999). As separation leads to conflict, separation might then mediate the relationship between variety and conflict. But it is also possible to imagine cases in which variety leads to neither separation nor conflict. Rather, unit members who differ in their respective areas of expertise may each fulfill a distinct role in the team, coordinating efficiently and respectfully with one another and paying due attention to one another's inputs (Stewart & Stasser, 1995). Further, when variety within a unit grows toward its maximum, the polarization indicative of maximum separation seems increasingly unlikely; there are simply too many V types represented for unit members to fall neatly into two clearly opposing factions. In sum, we suspect that variety may sometimes lead to separation and then conflict, but not inevitably or even generally.

Finally, we consider disparity. Disparity may lead to both an increase in separation and an increase in variety. When the members of a unit differ sharply in their relative power, prestige, or pay, they perceive the unit's policies and activities from different vantage points. Their interests differ as well. Those at the top of the hierarchy are likely to support the status quo. Those at the bottom may seek change. As a result, disparity may cause separation in beliefs, attitudes, or values related to unit processes and outcomes that might dislodge the current status hierarchy (Phillips & Zuckerman, 2001). Further, individuals who have less status, power, and influence than an "upper" minority of their teammates are likely to respond by forming coalitions with others who are similarly less powerful, acquiring valued resources through illicit means or through contacts outside the unit

(e.g., Murnighan, 1978). In addition, those having different levels of such resources are likely to socialize with different individuals and, thus, to develop distinct sets of network ties (e.g., Maman, 2000; McGuire, 2000). In this way disparity may engender variety in experiences, knowledge, and social contacts.

Diversity moderating diversity. The three diversity types may also *interact* to influence unit outcomes. Lau and Murnighan (1998) have already forwarded a rich set of ideas about joint effects of within-unit demographic differences. In their theory, for joint occurrences of demographic attributes to become increasingly potent *faultlines* within a unit, the diversity attributes in question must (1) be apparent to unit members, (2) covary or coincide strongly within the unit, and (3) create a small number of homogeneous subgroups or factions. Note that the mere coincidence or correlation of two attributes within a unit is insufficient to form a faultline. If, for example, task satisfaction and organizational commitment are positively correlated within a team, their joint occurrence will not necessarily divide the unit into two or more clearly differentiated factions. Moreover, as the number of factions grows, faultlines will weaken (there is no single, large "chasm" within the team but, rather, several small "cracks"). This suggests that strong faultlines are most likely to occur within a unit—translating Lau and Murnighan's propositions into an important case in our framework—when two or more variables have coincidentally maximum separation or disparity, or both, but also when they are coupled with only modest variety. Strong or near maximum separation within a unit creates opposing factions, which is a building block of strong faultlines. High disparity within a unit can do so as well. In contrast, when variety is high, faultlines will weaken (a clear distinction from our framework), since unit members cannot be divided into two or just a few sharply divided subsets.

Our differentiation of separation, variety, and disparity suggests other intriguing interdependent effects, complementing Lau and Murnighan's (1998) insights. Consider our recurring example of the research Teams S, V, and D, who are studying patient experiences with medical treatment. What if Team V (maximum variety, with each member from one of eight different disciplines) and Team D (maximum disparity, with one prestigious researcher and seven novices) were *the same team*? Our speculative answer is that higher levels of disparity would tend to diminish or even neutralize the benefits expected from the presence of differing sources of task-relevant knowledge within the team. Unit members, such as the renowned expert in Team D, who hold the highest concentration of the team's valued resources and have the highest status are likely to dictate the team's practices and performance. Team members with less power or status are likely to stay mum, deferring to the top members' wishes and failing to share critical information (Cruz, Henningsen, & Smith, 1999; Janis & Mann, 1977). Pitcher and Smith offer a similar interpretation: "A significant power shift renders the heterogeneity and the diverse cognitive perspectives that it represents less and less influential in the strategic decision-making process" (2001: 9). Accordingly, we suspect that disparity within a team is likely to moderate the expected positive relationship between variety and positive team outcomes.[5]

The interdependent effects of within-unit separation and variety may prove even more complex. What if Team V (maximum variety) and Team S (maximum separation in attitude toward qualitative research) were the same team? Members would find it difficult to develop and implement an integrative, creative plan of action. Conflict and division seem more likely than creativity and performance. If sharing unique information requires motivated behavior from unit members, even in the face of risk (others in the unit cannot validate it), it is likely that motivation would fall and the risk would rise as members saw themselves separated from one another on fundamental beliefs (Wittenbaum, Hollingshead, & Botero, 2004). Thus, low separation, especially on team goals and task-related values, may allow a team to realize the benefits of team members' variety of expertise and experience (cf. Edmondson, 1999; Gruenfeld et al., 1996; Harrison, Mohammed, McGrath, Florey, & Vanderstoep, 2003).

[5] Disparity does not always trump variety. If the source of disparity is status based on task experience or expertise, the unit's "ear" is likely to be tuned toward those who have the best and most relevant information to share (Wittenbaum, 1998). If, however, the source of disparity is based on another attribute *unrelated to the unit's task* (physical attractiveness, wealth), disparity may mitigate the advantages of variety (Hollingshead, 1996).

And yet a team that has *no* separation in member goals, attitudes, or beliefs but is high in variety may fail to recognize and make use of members' diverse areas of knowledge and expertise (Larson, Christensen, Abbott, & Franz, 1998; Stasser & Titus, 1985, 1987). Attention-capturing differences—if they are not too large—could motivate members to "dig deeper and to learn from contrasting examples" (Beckman & Haunschild, 2002: 98). Members who see themselves as identical on those underlying features might also assume that they share similar experiences and stores of knowledge and, thus, at least initially, might discuss shared experiences and information (Wittenbaum et al., 2004). Some minimal separation of attitudes within the unit—especially early, and about preferences for task processes (Jehn & Bendersky, 2003)—may trigger constructive debate and discussion, stimulating members to reveal to one another their distinctive knowledge and expertise (Simons et al., 1999).

The above ideas deal with potential bivariate effects of D, S, and V. What about the joint impact of all three forms of diversity? We consider two possibilities. Suppose the hospital research team is indeed deeply divided on attitudes toward research paradigms and, hence, is maximized on S. Suppose further that the two (interpretive, quantitative) factions are perfectly aligned with D and V: one faction holds frequently published and renowned members with medical backgrounds, and the other faction holds behavioral scientists with no established research records. Although the team is only moderate on V and D, it exhibits a strong faultline (Lau & Murnighan, 1998; Li & Hambrick, 2005). The team would be divided and dysfunctional, but it would not stalemate because of the power of the first faction. In contrast, if D and V *crosscut* S (a weak faultline; Brewer & Miller, 1984), with prestige and disciplinary background equally vested in opposing S factions, the team would have conflict but would be able to reach across factional boundaries to leverage its within-unit variety. Other trivariate configurations are viable and interesting and could readily be studied in both field and laboratory designs.

Multilevel Influences

Diversity is inherently a multilevel construct. It describes a unit in terms of the collective composition of its members. Still, most studies of diversity are single-level studies, focusing on unit-level outcomes of within-unit diversity. We join others (Jackson et al., 2003; Tsui & Gutek, 1999) in urging a more in-depth and comprehensive multilevel analysis of diversity. One approach would be to move up a level of analysis and consider *diversity across units* within organizations along the S, V, or D attribute in question. The effects of within-unit diversity may depend, in part, on the composition—specifically, the diversity—of the organizational context (e.g., Alderfer & Smith, 1982). The effects of minimum separation (perfect agreement) within a focal unit on S may depend on the extent to which the unit's perspective is itself close to or separated from predominant views for S within other units of the organization.

For example, minimum separation within a management department regarding the value of publishing in top-tier journals is likely to be a much greater source of departmental cohesion if other departments in the business school *do not* share the management department's perspective. If other units *do* share the focal unit's perspective, constituting minimum separation in the organization as a whole, then minimum separation within the unit is likely to be less salient to unit members; it doesn't make the unit distinctive within the organization. Turning back to Team S, members' maximal separation on attitude toward interpretive research might be taken as a healthy state of task conflict if wide, within-unit splits in such attitudes (maximal separation) are also characteristic of most other research teams within their sponsoring organization. If, however, the researchers who make up the more positivistic faction of Team S know that virtually all of the other units in their sponsoring organization are strongly positivistic (and not split), the presumption of normative correctness of their own position might lead to deeper, more severe, and more interpersonally charged battles within the team.

A complementary multilevel approach would be to consider the implications of diversity types for the experiences and reactions of *individuals within units*. This is the focus of most studies of relational demography (e.g., Jackson et al., 1991) and other forms of dyadic similarity (e.g., Turban & Jones, 1988). For example, Dose (1999) examined the correlates of an individual unit member's distance from the other members of

the unit, testing whether individuals whose values were similar to their teammates' were more attached to the team.

The extent of separation, variety, or disparity within a unit may color and shape an individual's experience of difference from other unit members. For instance, if a research team is low in variety of disciplinary backgrounds, say, with a single psychologist amidst an array of seven physicians, the lone psychologist is likely to be seen as an outlier on the team. This is documented in theory and research on minorities and tokenism (distinctiveness theory—McGuire, 1999; minority-majority influence—Nemeth, 1986). From a multilevel perspective, however, the experiences of someone who is different from all the others in the team will be radically changed depending on the unit context: Do all the others on the team also differ from one another, or are they all the same? If the research team has maximum variety, like our Team V, the lone psychologist (whose average difference from everyone else is still "1") is not an interpersonal outlier on the team but, in effect, just like everyone else. As with every other team member, he or she is the only representative of a particular background.

CONCLUSION

The challenge of differences—of diversity—is a crucial one for managers and scholars. However, even as research has accumulated, the nature and effects of diversity have remained uncertain. We have tried to address that challenge by positing that diversity constructs have three fundamental types: separation, variety, and disparity. The three types differ in their substance, shape, maxima, and implications. Crucial attributes and relevant theoretical perspectives differ for each type, as do the within-unit processes and outcomes likely to be associated with them. We urge investigators to specify the diversity types they are studying and to align them with specific, appropriate operationalizations. By systematically asking and answering, "What's the difference?" management scholars may reveal a clearer, more cumulative understanding of diversity in organizations.

REFERENCES

Adams, J. S. 1963. Toward an understanding of inequity. ***Journal of Abnormal and Social Psychology,*** 67: 422–436.

Adler, P. S., & Kwon, S. W. 2002. Social capital: Prospects for a new concept. ***Academy of Management Review,*** 27: 17–40.

Agresti, A., & Agresti, B. F. 1978. Statistical analysis of qualitative variation. In K. F. Schuessler (Ed.), ***Sociological methodology:*** 204–237. San Francisco: Jossey-Bass.

Alderfer, C. P., & Smith, K. K. 1982. Studying intergroup relations embedded in organizations. ***Administrative Science Quarterly,*** 27: 35–65.

Allison, P. D. 1978. Measures of inequality. ***American Sociological Review,*** 43: 865–880.

Ancona, D. G., & Caldwell, D. F. 1992. Demography and design: Predictors of new product team performance. ***Organization Science,*** 3: 321–341.

Argote, L., & Ingram, P. 2000. Knowledge transfer: A basis for competitive advantage in firms. ***Organizational Behavior and Human Decision Processes,*** 82: 150–169.

Ashby, W. R. 1956. ***An introduction to cybernetics.*** New York: Wiley.

Austin, J. R. 2003. Transactive memory in organizational groups: The effects of content, consensus, specialization, and accuracy on group performance. ***Journal of Applied Psychology,*** 88: 866–878.

Barrick, M. R., Stewart, G. L., Neubert, M. J., & Mount, M. K. 1998. Relating member ability and personality to work-team processes and team effectiveness. ***Journal of Applied Psychology,*** 83: 377–391.

Barsade, S. G., Ward, A. J., Turner, J. D. F., & Sonnenfeld, J. 2000. To your heart's content: A model of affective diversity in top management teams. ***Administrative Science Quarterly,*** 45: 802–836.

Beckman, C. M., & Haunschild, P. R. 2002. Network learning: The effects of partners' heterogeneity of experience on corporate acquisitions. ***Administrative Science Quarterly,*** 47: 92–124.

Bedeian, A. G., & Mossholder, K. W. 2000. On the use of the coefficient of variation as a measure of diversity. ***Organizational Research Methods,*** 3: 285–297.

Berger, J., Fisek, M. H., Norman, R. Z., & Zelditch, M., Jr. 1977. Status characteristics and expectation states: A graph-theoretical formulation. In J. Berger (Ed.), ***Status characteristics and social interaction: An expectations states approach:*** 91–134. New York: Elsevier.

Berger, J., Rosenholtz, S. J., & Zelditch, M. 1980. Status organizing processes. ***Annual Review of Sociology,*** 6: 479–508.

Berkowitz, L., & Macaulay, J. R. 1961. Some effects of differences in status level and status stability. ***Human Relations,*** 14: 135–147.

Beyer, J. M., Chattopadhyay, P., George, E., Glick, W. H., Ogilvie, dt, & Pugliese, D. 1997. The selective perception of managers revisited. ***Academy of Management Journal,*** 40: 716–737.

Blau, P. M. 1960. Patterns of deviation in work groups. ***Sociometry,*** 23: 245–261.

Blau, P. M. 1977. ***Inequality and heterogeneity.*** New York: Free Press.

Bloom, M. 1999. The performance effects of pay dispersion on individuals and organizations. ***Academy of Management Journal,*** 42: 25–40.

Bloom, M., & Michel, J. G. 2002. The relationships among organizational context, pay dispersion, and managerial turnover. ***Academy of Management Journal,*** 45: 33–42.

Bollen, K., & Lennox, R. 1991. Conventional wisdom on measurement: A structural equation perspective. ***Psychological Bulletin,*** 110: 305–314.

Boone, C., van Olffen, W., van Witteloostuijn, B., & De Brabander, B. 2004. The genesis of top management team diversity: Selective turnover among top management teams in Dutch newspaper publishing, 1970–94. ***Academy of Management Journal,*** 47: 633–656.

Brewer, M. B., & Miller, N. 1984. Beyond the contact hypothesis: Theoretical perspectives on desegregation. In N. Miller & M. B. Brewer (Eds.), ***Groups in contact: The psychology of desegregation:*** 281–302. Orlando, FL: Academic Press.

Bunderson, J. S., & Sutcliffe, K. M. 2002. Comparing alternative conceptualizations of functional diversity in management teams: Process and performance effects. ***Academy of Management Journal,*** 45: 875–893.

Burt, R. S. 2002. The social capital of structural holes. In M. F. Guillen, R. Collins, P. England, & M. Meyer (Eds.), ***The new economic sociology:*** 148–189. New York: Russell Sage Foundation.

Byrne, D. 1971. ***The attraction paradigm.*** New York: Academic Press.

Campbell, D. T. 1960. Blind variation and selective retention in creative thought as in other knowledge processes. ***Psychological Review,*** 67: 380–400.

Carpenter, M. A. 2002. The implications of strategy and social context for the relationship between top management team heterogeneity and firm performance. ***Strategic Management Journal,*** 23: 275–284.

Champernowne, D. 1974. A comparison of measures of inequality of income distribution. ***Economic Journal,*** 84: 26–54.

Chatman, J. A.. 1991. Matching people and organizations: Selection and socialization in public accounting firms. ***Administrative Science Quarterly,*** 36: 459–484.

Chatman, J. A., & Flynn, F. J. 2001. The influence of demographic heterogeneity on the emergence and consequences of cooperative norms in work teams. ***Academy of Management Journal,*** 44: 956–974.

Chattopadhyay, P., Glick, W. H., Miller, C. C., & Huber, G. P. 1999. Determinants of executive beliefs: Comparing functional conditioning and social influence. ***Strategic Management Journal,*** 20: 763–789.

Clore, G. L., & Byrne, D. A. 1974. A reinforcement-affect model of attraction. In T. L. Huston (Ed.), ***Foundations of interpersonal attraction:*** 143–170. New York: Academic Press.

Cohen, B. P., & Zhou, X. 1991. Status processes in enduring work groups. ***American Sociological Review,*** 56: 179–188.

Cruz, M. G., Henningsen, D. D., & Smith, B. A. 1999. The impact of directive leadership on group's information sampling, decisions, and perceptions of the leaders. ***Communication Research,*** 26: 349–369.

Deutsch, M. 1985. ***Distributive justice: A social psychological perspective.*** New Haven, CT: Yale University Press.

Doerr, K. H., Mitchell, T. R., Schriesheim, C. A., Freed, T., & Zhou, X. 2002. Heterogeneity and variability in the context of flow lines. ***Academy of Management Review,*** 27: 594–607.

Dooley, R. S., Fryxell, G. E., & Judge, W. Q. 2000. Belaboring the not-so-obvious: Consensus, commitment, and strategy implementation speed and success. ***Journal of Management,*** 26: 1237–1257.

Dose, J. J. 1999. The relationship between work values similarity and team-member and leader-member exchange relationships. ***Group Dynamics: Theory, Research, and Practice,*** 3: 20–32.

Drazin, R., & Rao, H. 1999. Managerial power and succession: SBU managers of mutual funds. ***Organization Studies,*** 20: 167–196.

Edmondson, A. 1999. Psychological safety and learning behavior in work teams. ***Administrative Science Quarterly,*** 44: 350–383.

Edwards, J. R. 2001. Multidimensional constructs in organizational behavior research: An integrative analytical framework. ***Organizational Research Methods,*** 4: 144–192.

Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. 1986. Perceived organizational support. ***Journal of Applied Psychology,*** 71: 500–507.

Eisenhardt, K. M., & Bourgeois, L. J. 1988. Politics of strategic decision making in high-velocity environments: Toward a midrange theory. ***Academy of Management Journal,*** 31: 737–770.

Ferrier, W. J. 2001. Navigating the competitive landscape: The drivers and consequences of competitive aggressiveness. ***Academy of Management Journal,*** 44: 858–878.

Finkelstein, S., & Hambrick, D. C. 1996. ***Strategic leadership: Top executives and their effects on organizations.*** Minneapolis: West Educational Publishing.

French, J. R. P., Jr., & Raven, B. 1959. The bases of social power. In D. Cartwright (Ed.), ***Studies in social power:*** 150–165. Ann Arbor: University of Michigan Press.

Gibson, C., & Vermeulen, F. 2003. A healthy divide: Subgroups as a stimulus for team learning behavior. ***Administrative Science Quarterly,*** 48: 202–239.

Gruenfeld, D. H., Mannix, E. A., Williams, K. Y., & Neale, M. A. 1996. Group composition and decision making: How member familiarity and information distribution affect process and performance. ***Organizational Behavior and Human Decision Processes,*** 67: 1–15.

Grusky, D. B. 1994. The contours of social stratification. In D. B. Grusky (Ed.), ***Social stratification: Class, race, and gender in sociological perspective:*** 3–35. Boulder, CO: Westview Press.

Hambrick, D. C., Cho, T. S., & Chen, M. 1996. The influence of

top management team heterogeneity on firms' competitive moves. ***Administrative Science Quarterly,*** 41: 659–684.

Hambrick, D. C., & Mason, P. A. 1984. Upper echelons: The organization as a reflection of its top managers. ***Academy of Management Review,*** 9: 193–206.

Hansen, M. T. 1999. The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. ***Administrative Science Quarterly,*** 44: 82–111.

Harrison, D. A., McLaughlin, M. E., & Coalter, T. M. 1996. Context, cognition, and common method variance: Psychometric and verbal protocol evidence. ***Organizational Behavior and Human Decision Processes,*** 68: 246–261.

Harrison, D. A., Mohammed, S., McGrath, J. E., Florey, A. T., & Vanderstoep, S. 2003. Time matters in team task performance: Effects of member familiarity, entrainment, and task discontinuity on speed and quality. ***Personnel Psychology,*** 56: 633–669.

Harrison, D. A., Price, K. H., & Bell, M. P. 1998. Beyond relational demography: Time and the effects of surface- and deep-level diversity on work group cohesion. ***Academy of Management Journal,*** 41: 96–107.

Harrison, D. A., Price, K. H., Gavin, J. H., & Florey, A. T. 2002. Time, teams, and task performance: Changing effects of surface- and deep-level diversity on group functioning. ***Academy of Management Journal,*** 45: 1029–1045.

Harrison, D. A., & Sin, H.-S. 2006. What is diversity and how should it be measured? In A. M. Konrad, P. Prasad, & J. K. Pringle (Eds.), ***Handbook of workplace diversity:*** 191–216. Newbury Park, CA: Sage.

Herfindahl, O. C. 1950. ***Concentration in the U.S. steel industry.*** Unpublished doctoral dissertation, Columbia University, New York.

Hill, M. O. 1973. Diversity and evenness: A unifying notation and its consequences. ***Ecology,*** 54: 427–431.

Hinsz, V. B., Tindale, R. S., & Vollrath, D. A. 1997. The emerging conceptualization of groups as information processors. ***Psychological Bulletin,*** 121: 43–64.

Hirschman, A. O. 1964. The paternity of an index. ***American Economic Review,*** 54: 761–762.

Hoffman, L. R., & Maier, N. 1961. Quality and acceptance of problem solutions by members of homogeneous and heterogeneous groups. ***Journal of Abnormal and Social Psychology,*** 62: 401–407.

Hofmann, D. A., Griffin, M., & Gavin, M. 2000. The application of hierarchical linear modeling to organizational research. In K. J. Klein & S. W. J. Kozlowski (Eds.), ***Multilevel theory, research, and methods in organizations:*** 467–511. San Francisco: Jossey-Bass.

Hogg, M. A., & Terry, D. J. 2000. Social identity and self-categorization processes in organizational contexts. ***Academy of Management Review,*** 25: 121–140.

Hollander, E. P. 1958. Conformity, status, and idiosyncrasy credit. ***Psychological Review,*** 65: 117–277.

Hollingshead, A. B. 1996. Information suppression and status persistence in group decision making. ***Human Communication Research,*** 23: 193–219.

Homans, G. C. 1961. ***Social behavior: Its elementary forms.*** New York: Harcourt, Brace, and World.

Ibarra, H. 1993. Personal networks of women and minorities in management: A conceptual framework. ***Academy of Management Review,*** 18: 56–87.

Jackson, S. E., Brett, J. F., Sessa, V. I., Cooper, D. M., Julin, J. A., & Peyronnin, K. 1991. Some differences make a difference: Individual dissimilarity and group heterogeneity as correlates of recruitment, promotions, and turnover. ***Journal of Applied Psychology,*** 76: 675–689.

Jackson, S. E., Joshi, A., & Erhardt, N. L. 2003. Recent research on team and organizational diversity: SWOT analysis and implications. ***Journal of Management,*** 29: 801–830.

James, L. R., Demaree, R. G., & Wolf, G. 1993. r_{wg}: An assessment of within-group interrater agreement. ***Journal of Applied Psychology,*** 78: 306–309.

Janis, I. L., & Mann, L. 1977. ***Decision making: A psychological analysis of conflict, choice, and commitment.*** New York: Free Press.

Jehn, K., & Bendersky, C. 2003. Intragroup conflict in organizations: A contingency perspective on the conflict-outcome relationship. ***Research in Organizational Behavior,*** 25: 187–242.

Jehn, K. A., Northcraft, G. B., & Neale, M. A. 1999. Why differences make a difference: A field study of diversity, conflict, and performance in workgroups. ***Administrative Science Quarterly,*** 44: 741–763.

Keltner, D., Gruenfeld, D. H., & Anderson, C. 2003. Power, approach, and inhibition. ***Psychological Bulletin,*** 110: 265–284.

Kilduff, M., Angelmar, R., & Mehra, A. 2000. Top management–team diversity and firm performance: Examining the role of cognitions. ***Organization Science,*** 11: 21–34.

Kimura, K. 1994. A micro-macro linkage in the measurement of inequality: Another look at the GINI coefficient. ***Quality and Quantity,*** 28: 83–97.

Klein, K. J., Conn, A. B., Smith, D. B., & Sorra, J. S. 2001. Is everyone in agreement? An exploration of within-group agreement in employee perceptions of the work environment. ***Journal of Applied Psychology,*** 86: 3–16.

Konrad, A. M. 2003. Defining the domain of workplace diversity scholarship. ***Group and Organization Management,*** 28: 4–17.

Konrad, A. M., & Gutek, B. A. 1987. Theory and research on group composition: Applications to the status of women and ethnic minorities. In S. Oskamp & S. Spacapan (Eds.), ***Interpersonal processes:*** 85–121. Thousand Oaks, CA: Sage.

Krackhardt, D. 1990. Assessing the political landscape: Structure, cognition, and power in organizations. ***Administrative Science Quarterly,*** 35: 342–369.

Larson, J. R., Jr., Christensen, C., Abbott, A. S., & Franz, T. M. 1998. Diagnosing groups: The pooling, management, and impact of shared and unshared case information in team-based medical decision making. ***Journal of Personality and Social Psychology,*** 75: 93–108.

Lau, D. C., & Murnighan, J. K. 1998. Demographic diversity

and faultlines: The compositional dynamics of organizational groups. ***Academy of Management Review,*** 23: 325–340.

Lawrence, B. S. 1997. The black box of organizational demography. ***Organization Science,*** 8: 1–22.

Lazear, E., & Rosen, S. 1981. Rank-order tournaments as optimum labor contracts. ***Journal of Political Economy,*** 89: 841–864.

Lazear, E. P. 1995. ***Personnel economics.*** Cambridge, MA: MIT Press.

Lee, Y., & Ottati, V. 1993. Determinants of in-group and out-group perceptions of heterogeneity: An investigation of Sino-American stereotypes. ***Journal of Cross-Cultural Psychology,*** 24: 298–318.

Lee, Y., & Ottati, V. 1995. Perceived in-group homogeneity as a function of group membership salience and stereotype threat. ***Personality and Social Psychology Bulletin,*** 21: 610–619.

Lefler, A., Gillespie, D. L., & Conaty, J. C. 1982. The effects of status differentiation on nonverbal behavior. ***Social Psychology Quarterly,*** 45: 153–161.

Li, J. T., & Hambrick, D. C. 2005. Factional groups: A new vantage on demographic faultlines, conflict, and disintegration in work teams. ***Academy of Management Journal,*** 48: 794–813.

Linnehan, F., & Konrad, A. M. 1999. Diluting diversity: Implications for intergroup inequality in organizations. ***Journal of Management Inquiry,*** 8: 399–414.

Locke, K. D., & Horowitz, L. M. 1990. Satisfaction in interpersonal interactions as a function of similarity in level of dysphoria. ***Journal of Personality and Social Psychology,*** 58: 823–831.

MacCallum, R. C., & Browne, M. W. 1993. The use of causal indicators in covariance structure models: Some practical issues. ***Psychological Bulletin,*** 114: 533–541.

Maman, D. 2000. Who accumulates directorships of big business firms in Israel? Organizational structure, social capital and human capital. ***Human Relations,*** 53: 603–629.

Marsch, J. B. T. 2002. Cultural diversity as human capital. ***Communication and Cognition,*** 35: 37–49.

Marsden, P. V. 1990. Network diversity, substructures and opportunities for contact. In C. Calhoun, M. Meyer, & R. S. Schott (Eds.), ***Structures of power and constraint: Papers in honor of Peter Blau:*** 397–410. Cambridge: Cambridge University Press.

Martin, J. D., & Gray, L. N. 1971. Measurement of relative variation: Sociological examples. ***American Sociological Review,*** 36: 496–502.

McGrath, J. E. 1984. *Groups: Interaction and performance.* Englewood Cliffs, NJ: Prentice-Hall.

McGrath, J. E., Berdahl, J. L., & Arrow, H. 1995. Traits, expectations, culture, and clout: The dynamics of diversity in work groups. In S. E. Jackson & M. N. Ruderman (Eds), ***Diversity in work teams: Research paradigms for a changing workplace:*** 17–45. Washington, DC: American Psychological Association.

McGuire, G. M. 2000. Gender, race, ethnicity, and networks: The factors affecting the status of employees' network members. ***Work and Occupations,*** 27: 501–523.

McGuire, W. J. 1999. ***Constructing social psychology: Creative and critical processes.*** New York: Cambridge University Press.

Miller, C. C., Burke, L. M., & Glick, W. H. 1998. Cognitive diversity among upper-echelon executives: Implications for strategic decision processes. ***Strategic Management Journal,*** 19: 39–58.

Miner, A. S., Haunschild, P. R., & Schwab, A. 2003. Experience and convergence: Curiosities and speculation. ***Industrial and Corporate Change,*** 12: 789–813.

Mollica, K. A., Gray, B., & Treviño, L. 2003. Racial homophily and its persistence in newcomers' social networks. ***Organization Science,*** 14: 123–137.

Mueller, J. H., Schuessler, H. L., & Costner, H. L. 1970. ***Statistical reasoning in sociology.*** Boston: Houghton Mifflin.

Murnighan, J. K. 1978. Models of coalition behavior: Game theoretic, social psychological and political perspectives. ***Psychological Bulletin,*** 85: 1130–1153.

Nemeth, C. J. 1986. Differential contributions of majority and minority influence. ***Psychological Review,*** 93: 23–32.

Nemetz, P. L., & Christensen, S. L. 1996. The challenge of cultural diversity: Harnessing a diversity of views to understand multiculturalism. ***Academy of Management Review,*** 21: 434–462.

Newcomb, T. M. 1961. ***The acquaintance process.*** New York: Holt, Rinehart & Winston.

O'Reilly, C. A., III, Caldwell, D. F., & Barnett, W. P. 1989. Work group demography, social integration, and turnover. ***Administrative Science Quarterly,*** 34: 21–37.

O'Reilly, C. A., III, Williams, K., & Barsade, S. 1997. Group demography and innovation: Does diversity help? ***Research in the Management of Groups and Teams,*** 1: 183–207.

Ostroff, C., & Harrison, D. A. 1999. Meta-analysis, levels of analysis, and best estimates of population correlations: Cautions for interpreting meta-analytic results in organizational behavior. ***Journal of Applied Psychology,*** 84: 260–270.

Park, B., & Judd, C. M. 1990. Measures and models of perceived group variability. ***Journal of Personality and Social Psychology,*** 42: 1051–1068.

Park, B., Ryan, C. S., & Judd, C. M. 1992. Role of meaningful sub-groups in explaining differences in perceived variability for in-groups and out-groups. ***Journal of Personality and Social Psychology,*** 63: 553–567.

Pelled, L. H. 1996. Demographic diversity, conflict, and work group outcomes: An intervening process theory. ***Organization Science,*** 6: 207–229.

Pelled, L. H., Eisenhardt, K. M., & Xin, K. R. 1999. Exploring the black box: An analysis of work group diversity, conflict, and performance. ***Administrative Science Quarterly,*** 44: 1–28.

Peterson, E., & Thompson, L. 1997. Negotiation teamwork: The

impact of information distribution and accountability for performance depends on the relationship among team members. ***Organization Behavior and Human Decision Processes,*** 72: 364–383.

Pfeffer, J. 1983. Organizational demography. ***Research in Organizational Behavior,*** 5: 299–357.

Pfeffer, J. 1998. ***The human equation: Building profits by putting people first.*** Boston: Harvard Business School Press.

Pfeffer, J., & Davis-Blake, A. 1990. Determinants of salary dispersion in organizations. ***Industrial Relations,*** 29: 38–57.

Pfeffer, J., & Davis-Blake, A. 1992. Salary dispersion: Location in the salary distribution, and turn-over among college administrators. ***Industrial and Labor Relations Review,*** 45: 753–763.

Pfeffer, J., & Langton, N. 1988. Wage inequality and the organization of work: The case of academic departments. ***Administrative Science Quarterly,*** 33: 588–606.

Pfeffer, J., & Langton, N. 1993. The effect of wage dispersion on satisfaction, productivity, and working collaboratively: Evidence from college and university faculty. ***Administrative Science Quarterly,*** 38: 382–407.

Phillips, D. J., & Zuckerman, E. W. 2001. Middle-status conformity: Theoretical restatement and empirical demonstration in two markets. ***American Journal of Sociology,*** 107: 379–429.

Pitcher, P., & Smith, A. D. 2001. Top management team heterogeneity: Personality, power, and proxies. ***Organization Science,*** 12: 1–18.

Priem, R. L. 1990. Top management team group factors, consensus, and firm performance. ***Strategic Management Journal,*** 11: 469–478.

Priem, R. L., Lyon, D. W., & Dess, G. G. 1999. Inherent limitations of demographic proxies in top management team heterogeneity research. ***Journal of Management,*** 25: 935–953.

Quattrone, G. A., & Jones, E. E. 1980. The perception of variability within ingroups and outgroups: Implications for the law of small numbers. ***Journal of Personality and Social Psychology,*** 13: 269–277.

Rafaeli, A., & Pratt, M. 1993. Tailored meanings: On the meaning and impact of organizational dress. ***Academy of Management Review,*** 18: 32–55.

Ragins, B. R., & Gonzalez, J. A. 2003. Understanding diversity in organizations: Getting a grip on a slippery construct. In J. Greenberg (Ed.), ***Organizational behavior: The state of the science:*** 125–163. Mahwah, NJ: Lawrence Erlbaum Associates.

Ragins, B. R., & Sundstrom, E. 1989. Gender and power in organizations: A longitudinal perspective. ***Psychological Bulletin,*** 105: 51–88.

Randel, A. E., & Jaussi, K. S. 2003. Functional background identity, diversity, and individual performance in cross-functional teams. ***Academy of Management Journal,*** 46: 763–774.

Reagans, R., & Zuckerman, E. W. 2001. Network, diversity, and productivity: The social capital of corporate R&D teams. ***Organization Science,*** 12: 502–517.

Reagans, R., Zuckerman, E. W., & McEvily, B. 2004. How to make the team: Social networks vs. demography as criteria for designing effective teams. ***Administrative Science Quarterly,*** 49: 101–133.

Ridgeway, C. L., Johnson, C., & Diekema, D. 1994. External status, legitimacy, and compliance in male and female groups. ***Social Forces,*** 72: 1051–1077.

Riordan, C. M. 2000. Relational demography within groups: Past developments, contradictions, and new directions. ***Research in Personnel and Human Resource Management,*** 19: 131–173.

Riordan, C. M., & Shore, L. 1997. Demographic diversity and employee attitudes: Examination of relational demography within work units. ***Journal of Applied Psychology,*** 82: 342–358.

Schneider, B. 1987. The people make the place. ***Personnel Psychology,*** 40: 437–453.

Schneider, B., & Goldstein, H. W. 1995. The ASA framework: An update. ***Personnel Psychology,*** 48: 747–773.

Shannon, C. E. 1948. A mathematical theory of communication. ***Bell System Technical Journal,*** 27: 379–423, 623–656.

Shaw, B. J. 2004. The development and analysis of a measure of group faultlines. ***Organizational Research Methods,*** 7: 66–100.

Siegel, P. A., & Hambrick, D. C. 2005. Pay disparities within top management groups: Evidence of harmful effects on performance of high-technology firms. ***Organization Science,*** 16: 259–274.

Simons, T., Pelled, L. H., & Smith, K. A. 1999. Making use of difference: Diversity, debate, and decision comprehensiveness in top management teams. ***Academy of Management Journal,*** 42: 662–673.

Simpson, E. H. 1949. Measurement of diversity. ***Nature,*** 163: 688.

Sorenson, J. 2002. The use and misuse of the coefficient of variation in organizational demography research. ***Sociological Methods and Research,*** 30: 475–491.

Stasser, G., & Titus, W. 1985. Pooling of unshared information in group decision making. ***Journal of Personality and Social Psychology,*** 48: 1467–1478.

Stasser, G., & Titus, W. 1987. Effects of information load and percentage of shared information on the dissemination of unshared information during group discussion. ***Journal of Personality and Social Psychology,*** 53: 81–93.

Stasser, G., Vaughan, S. I., & Stewart, D. D. 2000. Pooling unshared information: The benefits of knowing how access to information is distributed among group members. ***Organizational Behavior and Human Decision Processes,*** 82: 102–116.

Stewart, D. D., & Stasser G. 1995. Expert role assignment and information sampling during collective recall and decision-making. ***Journal of Personality and Social Psychology,*** 69: 619–628.

Tajfel, H. 1981. ***Human groups and social categories: Studies***

in social psychology. Cambridge: Cambridge University Press.

Tajfel, H., & Turner, J. C. 1979. An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), ***The social psychology of intergroup relations:*** 33–47. Monterey, CA: Brooks/Cole.

Teachman, J. D. 1980. Analysis of population diversity. ***Sociological Methods and Research,*** 8: 341–362.

Tsui, A. S., Ashford, S. J., St. Clair, L., & Xin, K. R. 1995. Dealing with discrepant expectations: Response strategies and managerial effectiveness. ***Academy of Management Journal,*** 38: 1515–1543.

Tsui, A. S., Egan, T. D., & O'Reilly, C. A., III. 1992. Being different: Relational demography and organizational attachment. ***Administrative Science Quarterly,*** 37: 549–579.

Tsui, A. S., & Gutek, B. A. 1999. ***Demographic differences in organizations: Current research and future directions.*** Lanham, MD: Lexington Books.

Tsui, A. S., Xin, K. R., & Egan, T. D. 1995. Relational demography: The missing link in vertical dyad linkage. In S. E. Jackson & M. N. Ruderman (Eds.), ***Diversity in work teams:*** 97–129. Washington, DC: American Psychological Association.

Turban, D. B., & Jones, A. P. 1988. Supervisor-subordinate similarity: Types, effects, and mechanisms. ***Journal of Applied Psychology,*** 73: 228–234.

Turner, J. C. 1985. Social categorization and the self-concept: A social cognitive theory of group behavior. ***Advances in Group Processes: Theory and Research,*** 2: 77–122.

Wasserman, S., & Faust, K. 1994. ***Social network analysis: Methods and applications.*** New York: Cambridge University Press.

Watson, W. E., Kumar, K., & Michaelson, L. K. 1993. Cultural diversity's impact on interaction process and performance: Comparing homogenous and diverse task groups. ***Academy of Management Journal,*** 36: 590–602.

Webber, S. S., & Donahue, L. 2001. Impact of highly and less job related diversity on work group cohesion and performance: A meta analysis. ***Journal of Management,*** 27: 141–162.

Wiersema, M. F., & Bantel, K. A. 1992. Top management team turnover as an adaptation mechanism: The role of the environment. ***Strategic Management Journal,*** 14: 485–504.

Wiersema, M. F., & Bird, A. 1993. Organizational demography in Japanese firms: Group heterogeneity, individual dissimilarity, and top management team turnover. ***Academy of Management Journal,*** 36: 996–1025.

Williams, K. Y., & O'Reilly, C. A., III. 1998. Demography and diversity in organizations: A review of 40 years of research. ***Research in Organizational Behavior,*** 20: 77–140.

Wittenbaum, G. M. 1998. Information sampling in decision-making groups: The impact of members' task relevant status. ***Small Group Research,*** 29: 29–57.

Wittenbaum, G. M., Hollingshead, A. B., & Botero, I. C. 2004. From cooperative to motivated information sharing in groups: Moving beyond the hidden profile paradigm. ***Communication Monographs,*** 7: 59–83.

Wood, W. L. 1987. Meta-analytic review of sex differences in group performance. ***Psychological Bulletin,*** 102: 53–71.

David A. Harrison (dharrison@psu.edu) is Distinguished Professor of Management in the Smeal College of Business, The Pennsylvania State University. He received his Ph.D. in social/organizational/individual differences psychology from the University of Illinois. His current research deals with time in organizations, team diversity, work role adjustment, and executive decision making.

Katherine J. Klein (kleink@wharton.upenn.edu) is the Edward H. Bowman Professor of Management at the University of Pennsylvania's Wharton School. She received her Ph.D. in community psychology from the University of Texas. Her current research interests include multilevel theory and processes, diversity, social networks, team leadership and effectiveness, and employee ownership.