The Myth of "the" Micro-Macro Divide: Bridging System-Level and Disciplinary Divides

Janice C. Molloy, Robert E. Ployhart and Patrick M. Wright

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We clarify that management scholars do not have a shared conceptualization of what the terms micro and macro mean. Therefore, there is not one, but rather there are multiple micro–macro divides within management. Specifically, there are three micro–macro divides that separate scholarship at three levels of the social and economic systems that management scholars study. These system levels include individuals and groups, organizations, and the broader social and economic systems (which contain individuals and organizations—such as industries, labor markets, and societies). Scholarship at these three system levels is often based in different disciplines. For example, scholarship on individuals and groups is often based in psychology whereas scholarship regarding organizations and social and economic systems is often based in economics or sociology. Yet there are fundamental differences in the theoretical assumptions and methodological traditions underlying these disciplines. We call these differences disciplinary divides and argue that because disciplinary divides oftentimes coexist with system-level divides, scholars bridging system levels need to be cognizant of disciplinary divides. The purpose of this article is to help scholars bridge these divides. To this end, we first identify the nature and specific types of divides. We then present a content analysis of 300 articles as a...
snapshot of the extent to which bridging scholarship is conducted. Finally, we provide a road-
map that details the specific intellectual steps required to bridge system-level and disciplinary
divides and make one’s scholarship more accessible to scholars from other disciplines and man-
age ment subdomains.

Keywords: philosophy of science; micro; macro; multilevel; multidisciplinary

Many reviews and scholarly publications argue that management scholarship is frac-
tured along a micro–macro divide. The need to bridge this divide has been the focus of
literature reviews both across the domain of management (e.g., Bamberger, 2008) and
within specific management subdomains. Indeed, calls have been made to bring together
micro and macro scholarship within organizational behavior (OB; e.g., Cappelli & Sherer,
1991; Rousseau, 1985), human resource management (HRM; e.g., Ferris, Hochwater,
Buckley, Harrell-Cook, & Frink, 1999; Wright & Boswell, 2002), strategy (Business Policy
and Strategy [BPS]; e.g., Short, Palmer, & Ketchen, 2003a, 2003b), and entrepreneurship
(ENT; e.g., Hisrich, Langan-Fox, & Grant, 2007; Thornton, 1999). The term divide refers
to the conceptual and methodological separations between different literatures. Divides
occur because scholars typically focus on only one part of the vast economic and social
systems in which individuals and organizations are embedded. Specifically there are three
primary system levels (or simply levels) at which management scholars have focused atten-
tion (Roberts, Hulin, & Rousseau, 1978). These three system levels are individuals and
groups, organizations, and the broader economic and social systems (which contain indi-
viduals and organizations—such as industries, labor markets, and societies).

Why are management scholars urged to bridge divides between these system levels?
Any level within a hierarchical system cannot be understood in isolation because it is
shaped by—and in turn shapes—other system levels (Goodman, 2000; Schneider, 1989;
Von Bertalanffy, 1950). Therefore, it is imperative to attend to whole–part relationships or,
in the elegant words of Kozlowski and Klein, “understand the whole and keep an eye on
the parts” (2000: 54). Indeed, without scholarship that links system levels to the broader
management whole, scholars within subdomains may inadvertently advocate contradicting
“evidence-based” management practices. One example of such contradictory scholarship
is HRM research that implies that by hiring employees with higher cognitive ability, firms
will be more competitive. Yet this guidance conflicts with the predictions that strategy
scholars would arrive at using, as one example, strategic factor market theory (Barney,
1986b; Dierickx & Cool, 1989). This theory indicates that intelligent employees cannot be
a source of firm competitive advantage because employees are hired through what econo-
mists call relatively efficient labor markets. In other words, strategic factor market theory
suggests that any gains from employing highly intelligent individuals will be offset by the
compensation premiums required to hire these individuals. Such contradictory scholarship
is problematic when it persists for extended periods because it forestalls advances in both
subdomains and potentially misguides practitioners. Ultimately, scholarship that bridges
divides curtails contradictory scholarship by either triangulating findings or surfaceing alter-
native views for debate.
There is, however, a puzzle at the heart of calls to bridge “the” micro–macro divide: Management scholars lack a shared conception of the micro–macro divide. This lack of shared understanding is so pervasive that it is reflected in our very language. For example, scholars drawing on economics may use the term *micro* to refer to firms (e.g., Barney, 1986a; Cowan & Jonard, 2009), whereas those drawing on psychology may use *micro* to refer to individuals (Kozlowski, 2009; Rousseau, 2000). Indeed, the entities to which the terms *micro* and *macro* refer depend on the subdomain and discipline within which the scholar is operating.

Our premise is that these different meanings create considerable confusion and obscure two important facts. First, there is more than one system-level (or micro–macro) divide within management. Specifically, there are three system-level (or micro–macro) divides that separate scholarship at the three system-levels themselves (*individuals and groups*, *organizations*, and *economic and social systems*). Second, these system-level divides often coexist with *disciplinary divides* that separate the trinity of disciplines that underlie management scholarship: psychology, economics, and sociology. Disciplinary divides are important because system levels often draw on different disciplines; therefore, to bridge system levels, one needs to consider disciplinary differences. For example, scholarship on individuals often draws on psychology, and scholarship on organizations often draws on economics. So to bring together scholarship on individuals and organizations, one may need to bring together aspects of psychology and economics. Yet it is well accepted that psychology and economics have fundamentally different theoretical perspectives and methodological standards (Grimshaw & Rubery, 2007). And in turn, journal referees drawing from these different disciplines will have fundamentally different perspectives regarding what constitutes theoretical and methodological “excellence.”

We seek here to make clear the various divides within management and illustrate how to bridge both system-level and disciplinary divides. As suggested, we first show that there is not a shared conceptualization of *the* micro–macro divide within management, but actually, there are two distinct yet often intertwined categories of divides: system level and disciplinary. Specifically, we identify three system-level (micro–macro) divides and three disciplinary divides. We then present a content analysis of 300 articles as a snapshot of the extent to which bridging scholarship is conducted across system levels and disciplines. Finally, we provide a roadmap that details the specific intellectual steps required to bridge system-level and disciplinary divides. This roadmap will provide researchers with new ways to develop their theories and empirical studies in order to be both more rigorous and more accessible to scholars from other disciplines and subdomains.

The Nature of System-Level and Disciplinary Divides

The management literature is replete with calls to narrow or bridge *the* micro–macro divide. This implies that there is only one divide. In this section, however, we show that there is not a single micro–macro divide because management scholars do not have a shared mindset regarding what the terms *micro* and *macro* mean. We argue here for the recognition of three “micro–macro” or system-level divides and show how these system-level divides often coincide with one or more disciplinary divides.
One way to demonstrate that there is not a shared conceptualization of the micro–macro divide is to examine the meanings that scholars ascribe to the terms *micro* and *macro*. Consider, for example, six large Academy of Management divisions and their associated management subdomains (e.g., BPS; ENT; HRM; international business, or IB; organization and management theory, or OMT; and OB). These divisions tend to map directly onto one or two specific system levels. Table 1 provides a reasonably comprehensive view of the ways that *micro* and *macro* are defined across subdomains. Subdomains are listed down the left side of the table. Across each row (subdomain), example micro and macro entities are listed; the far-right cell of each row contains the resulting micro–macro divide(s). For example, in OB, individuals are considered micro and organizations are considered macro. Therefore, the micro–macro divide in OB is the separation between scholarship on individuals (micro) versus organizations (macro).

Looking down Table 1, there is little consistency regarding what is considered micro and macro—and therefore what is “the” micro–macro divide. Looking again at OB, micro scholars focus on individuals and groups whereas macro scholars focus on organizations; yet this conceptualization contradicts how *micro* and *macro* are used in, for example, ENT, where *micro* may refer to firms and *macro* to economic and social systems (Aldrich, 2006). Because scholars in OB and ENT have different conceptualizations of the terms *micro* and *macro*, they consequently have different conceptualizations of the micro–macro divide. For example, to an OB scholar, “the” micro–macro divide separates scholarship on individuals and groups from scholarship on organizations. In contrast, for an ENT scholar, “the” micro–macro divide might separate scholarship on firms from scholarship on the broader economic and social systems in which firms are embedded. Alternatively, an ENT scholar might consider “the” micro–macro divide to separate scholarship on individuals (i.e., potential entrepreneurs) and broader economic and social entities. As indicated in Table 1, there are many other examples of pairs of entities said to comprise a micro–macro divide. Indeed, sometimes even within subdomains (e.g., ENT, IB), the various entities defined as micro and macro can be combined to create multiple and distinct micro–macro pairings/divides.

As indicated, management scholars have focused substantial attention at three system levels: (a) individuals and groups, (b) organizations, and (c) economic and social systems. For example, Mahoney and McGahan noted that “the central aim of our field (BPS) is to explain and predict the performance of organizations, and particularly firms, as distinct from the performance of markets, individuals and economies” (2007: 81). Similarly, Aldrich (2006) noted the need to understand the existence of firms within a web of individuals, markets, and other social institutions. Kozlowski (2009) underscored the importance of examining phenomena across individual, small group, and organization levels.

Organizations are the common tie that binds management scholars; indeed, in Table 1 all subdomains have the organization listed as either a micro or macro entity. Building on Aldrich (2006), Felin and Foss (2005), and King, Felin, and Whetten (2010), we broadly define organizations here as collections of social entities (such as teams and work groups) that (a) share broad goals, boundaries, and activity systems and (b) have sovereign powers granted by the state (i.e., are treated as unitary actors that make transactions, can sue, and can be sued).
### Table 1
**Management Subdomain Depictions of Micro and Macro and Corresponding Divides**

<table>
<thead>
<tr>
<th>Subdomain</th>
<th>Micro Entities</th>
<th>Macro Entities</th>
<th>Corresponding Micro–Macro Divide(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BPS</strong></td>
<td>Firm, corporation</td>
<td>Industries, interfirm networks, regional clusters, strategic groups, economies</td>
<td>Separation between scholarship on organizations vs. economic and social systems</td>
</tr>
<tr>
<td><strong>ENT</strong></td>
<td>Individuals or firms</td>
<td>Alliances, interfirm networks, regional clusters, strategic groups, industries, populations, economies</td>
<td>Separation between scholarship on individuals and groups vs. organizations; Separation between scholarship on organizations vs. economic and social systems</td>
</tr>
<tr>
<td><strong>OMT</strong></td>
<td>Groups, organizations</td>
<td>Organizations, industries, fields, populations, societies, economies</td>
<td>Separation between scholarship on organizations vs. economic and social systems</td>
</tr>
<tr>
<td><strong>HRM</strong></td>
<td>Individuals, interpersonal dyads, groups</td>
<td>Organizations broadly defined,* labor markets</td>
<td>Separation between scholarship on individuals and groups vs. organizations; Separation between scholarship on organizations vs. economic and social systems</td>
</tr>
<tr>
<td><strong>IB</strong></td>
<td>Individuals, groups, firms, subsidiaries, firm components, multinational enterprises*</td>
<td>Strategic groups, industries, populations, nations, societies, suprasocietal structures*</td>
<td>Separation between scholarship on organizations vs. economic and social systems</td>
</tr>
<tr>
<td><strong>OB</strong></td>
<td>Individuals, interpersonal dyads, groups</td>
<td>Organizations broadly defined*</td>
<td>Separation between scholarship on organizations vs. economic and social systems</td>
</tr>
</tbody>
</table>

*Note: BPS = strategy; ENT = entrepreneurship; OMT = organization and management theory; HRM = human resource management; IB = international business; OB = organizational behavior.*

*Building on Aldrich (2006), Felin and Foss (2005), and King, Felin and Whetten (2010), we have broadly defined organizations here as goal-directed, boundary-maintaining activity systems that comprise social entities (such as teams and work groups). Organizations are nested within still broader social and economic systems and have sovereign powers granted by the state (i.e., are treated as unitary actors that make transactions and can sue and be sued). Examples of organizations include entire entities such as multinational enterprises, corporations, and firms, as well as parts of these organizations, such as establishments, business units, subsidiaries, and geographies.*

*See Toyne and Nigh (1998).*
Examples of organizations include entire entities, such as multinational enterprises, corporations, and firms, as well as parts of these organizations, such as establishments, business units, subsidiaries, and geographies.

The existence of these three system levels creates three distinct system-level divides. First, scholarship on *individuals and groups* is separated from scholarship regarding *organizations*; second, scholarship on *organizations* is separated from scholarship on *economic and social systems*; and, third, scholarship on *individuals and groups* is separated from scholarship on *economic and social systems*. As shown in the right-hand column of Table 1, each subdomain considers at least one of these three divides. Moreover, within some subdomains (i.e., ENT and IB), all three system-level divides are examined.

**Disciplinary Divides**

Some might say that the differences between the three system-level divides are not problematic, for these differences are easily mitigated by scholars’ specifying the entities being examined (e.g., industries, organizations, individuals) rather than referencing “micro” and “macro” phenomena more generally. Although we agree that this approach would lead to clearer communications regarding levels, we argue that more is needed to bridge system-level divides because scholarship at different system-levels is often based in different disciplines. As suggested earlier, the study of individuals and groups tends to be based in psychology, whereas the study of organizations tends to be based in economics. Therefore, in this example, to bridge this system-level divide (i.e., scholarship regarding individuals and groups with organization-level scholarship) the disciplines of psychology and economics often must also be bridged. For example, strategic HRM scholarship often requires integration of psychological and economic perspectives (e.g., Chadwick & Dabu, 2009).

In this article, the term *disciplinary divide* refers to differences in theories, methods, and/or assumptions between any two scientific domains. The lenses through which scholars view management phenomena are shaped by these theories, methods, and assumptions; therefore disciplinary differences have important implications for how management phenomena are differentially viewed, conceptualized, examined, and measured. Although disciplinary divides may exist between any two disciplines (e.g., anthropology, sociology, history), we draw distinctions among the trinity of disciplines widely recognized as underlying management (see Agarwal & Hoetker, 2007; Rynes, Bartunek, & Daft, 2001) and illustrated in Figure 1: psychology, economics, and sociology (we discuss the specific elements in the figure shortly).

What are the implications of these disciplinary divides? Theoretical differences between disciplines have important implications for how management phenomena are viewed and conceptualized. Consider human capital. Scholars working from a psychological foundation are likely to view individual-level human capital as accumulating from psychological processes such as learning and individual differences in, for example, cognitive ability. In contrast, scholars operating with an economic lens are likely to view human capital as an investment decision (which is consistent with these scholars’ views on other resources considered “capital”). Taking yet another perspective, those scholars working from a sociological perspective might consider one’s career history and the structural position or prominence of
one’s prior employers (e.g., Burton, Sorensen, & Beckman, 2002). As these examples suggest, divides between disciplines lead to contrasting ways of viewing management phenomena. The implication is that because disciplinary divides exist, there is not a shared epistemology (or single “correct” way of viewing management phenomena).

Methodological differences between disciplines affect how management phenomena are examined and measured. For example, scholars within different subdomains have different standards for assessing the quality of empirical tests. For example, a psychometrician will be skeptical about measures for which construct validity evidence is not provided, in particular the single-item measures that are purportedly often used in BPS and ENT. Yet an econometrician will be skeptical about research that considers managerial policy decisions but does not incorporate methodological treatments for endogeneity problems associated with unobserved heterogeneity (Hamilton & Nickerson, 2003; Leiblein, Reuer, & Dalsace, 2002; Shaver, 1998). For example, concerns have been raised about the robustness of findings from HRM and OB studies that do not incorporate these econometric endogeneity treatments (e.g., Chadwick, 2009).

Yet these differing disciplinary standards and their importance in bridging system-level divides have likely been blind spots for two reasons. First, to date, guidance regarding bridging system levels has been unidisciplinary (cf. Klein & Kozlowski, 2000; Ployhart & Schneider, 2005; Rousseau, 1985). However, one’s ability to bridge system-level divides is hindered when one is not aware that latent disciplinary divides may need to be addressed. In turn, journal referees may not be alert to the intertwining of disciplinary and system-level considerations and may inappropriately apply unidisciplinary standards. If management scholarship is inherently multidisciplinary, such unidisciplinary assessments must be carefully weighed when publication decisions are made for management journals (vs. discipline-specific journals).

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**Figure 1**

**The Trinity of Management Disciplines**

1: Decision theories (e.g., Prospect theory: Kahneman & Tversky, 1979)
2: Evolution of entrepreneurial firms (e.g., Aldrich, 2006)
3: Evolutionary economics (e.g., Nelson & Winter, 1982)
4: Mentoring development networks (e.g., Higgins & Kram, 2000)
Second, because the norm in management doctoral programs is to expose students to a single discipline (Agarwal & Hoetker, 2007; Rynes, 2007), many academics may be ill equipped to recognize and/or address disciplinary divides. Moreover, this training may fail to instill an appreciation for the defining hallmarks and “best practices” of each discipline. For example, we examined discipline-specific methods texts and found that the psychometric best practices relating to latent constructs were addressed in the leading psychometric text (Nunnally & Bernstein, 1994) but not mentioned in well-accepted econometric texts (e.g., Greene, 2007; Wooldridge, 2008). Indeed, the term construct did not appear in these econometric texts as a noun to represent a latent factor (as the term is used in psychometrics) but rather as a verb to, for example, reflect the construction of confidence intervals. Similarly, econometric texts discussed econometric best practices for coping with the endogeneity associated with unobserved heterogeneity (e.g., Greene, 2007; Wooldridge, 2008). However, this topic was not addressed in the psychometric text (Nunnally & Bernstein, 1994). This means that management scholars trained in a unidisciplinary approach are not likely aware of the methodological “best practices” of other disciplines or how their work will be evaluated in the multidisciplinary review process of management journals.

In sum, we argue that bridging system-level divides oftentimes involves bridging disciplinary divides. As a result, to effectively bridge system levels, management scholars need to be attuned to the ways that one’s disciplinary training colors not only their own view of what “quality” management theory building and methodology are, but also the views of others involved in the research and publication processes. Because scholarship that bridges divides is important for the advancement of management and subdomain literatures, there is a need for at least some management scholars to have a doctoral education that exposes them to not only philosophy of science but also the epistemological, theoretical, and methodological traditions of the trinity of disciplines. Toward this end, there is a need for multidisciplinary tools, such as social science methods textbooks that highlight similarities and differences among psychometric, econometric, and sociological approaches. To be clear, we are not suggesting that it is advisable (or even feasible) to train experts in the theoretical or methodological approaches of the trinity of disciplines. Nor are we suggesting that management scholars turn away from specializing in a single discipline. Rather, our point is simply that students need to be aware that often the phenomenon they examine will be studied in multiple subdomains using different disciplinary perspectives (e.g., trust is studied from an economic perspective in BPS and ENT and a psychological perspective in OB; Alvarez, Barney, & Bosse, 2004). These disciplines have differing epistemologies, which in turn are intertwined with differing methodological standards. Each discipline has theoretical hallmarks and methodological best practices that are important to be aware of because they may (a) offer opportunities to enrich one’s scholarship, (b) provide insight into how other management scholars will perceive one’s work, and (c) facilitate boundary-spanning collaborations with management colleagues.

Illustration. In Table 2, a high-level illustration is provided of some of the theoretical and methodological divides separating the trinity of disciplines underlying management scholarship. Disciplines are listed across the top of the table. Then, for each discipline, the domain is listed and followed by the depiction of micro, macro, and micro–macro divide(s). Finally,
theoretical and methodological assumptions are noted. Our foci here are the management-specific subdisciplines; for example, our focus for psychology is industrial-organizational (IO) psychology, and for sociology it is organizational sociology. We do not refer to these specific subdisciplines in the table because of confusion caused by, for example, IO psychology’s focusing on individuals within organizations yet IO economics’ focusing on firms within industries and markets.

Table 2
Overview of the Trinity of Disciplines Underlying Management Scholarship

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Psychology</th>
<th>Economics</th>
<th>Sociology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Domain</strong></td>
<td>Individuals</td>
<td>Markets</td>
<td>Societies</td>
</tr>
<tr>
<td>Micro entities</td>
<td>Intra-individual psychological processes</td>
<td>Individuals or firms</td>
<td>Social position, roles, interactions, relationships</td>
</tr>
<tr>
<td>Macro entities</td>
<td>Situations/context</td>
<td>Markets and economies</td>
<td>Societies, fields, populations</td>
</tr>
<tr>
<td><strong>Theoretical assumptions</strong></td>
<td>Based on psychological processes</td>
<td>Rational agent model</td>
<td>Homo sociologicus</td>
</tr>
<tr>
<td>View of human behavior</td>
<td>Primacy of individual</td>
<td>Primacy of incentives</td>
<td>Primacy of social institutions</td>
</tr>
<tr>
<td>View of society</td>
<td>Primacy of individual</td>
<td>Primacy of incentives</td>
<td>Primacy of social institutions</td>
</tr>
<tr>
<td><strong>Methodological assumptions</strong></td>
<td>Deductive-empiricism</td>
<td>Deductive-Axiomatic</td>
<td>Inductive-Data driven</td>
</tr>
<tr>
<td>Approach to research</td>
<td>Primary: Quantitative assessment of subjective properties</td>
<td>Secondary: Quantitative assessment of “objective” properties</td>
<td>Primary: Qualitative and quantitative</td>
</tr>
<tr>
<td>Data</td>
<td>Interval</td>
<td>Ratio</td>
<td>Nominal</td>
</tr>
<tr>
<td>Prevalent scale type</td>
<td>Construct validity</td>
<td>Endogeneity treatments when choices involved</td>
<td>Mixed-method research, which embraces complexity of situations</td>
</tr>
<tr>
<td>Discipline-specific best practice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summary depiction</td>
<td>Latent constructs</td>
<td>Elegant models</td>
<td>Dirty hands</td>
</tr>
</tbody>
</table>

Theoretical Assumptions. Given that disciplinary lenses are shaped by assumptions regarding human behavior and one’s relation to society (Coleman, 1990; Felin & Foss, 2005), representative theoretical assumptions are listed (see middle of Table 2). For example, psychology is based on understanding the human experience, including the psychological processes underlying human needs, desires, and differences (Leahey, 1991). These psychological processes differ based on enduring characteristics of individuals (e.g., their cognitive ability), transitive characteristics of individuals (e.g., dispositions and moods), and situational demands. In other words, psychology recognizes and examines the differences among individuals. Moreover, psychology is generally grounded in the belief that there are individual differences in knowledge, skills, abilities, and other characteristics (e.g., personality). Psychologists focus on the structure, antecedents, and consequences of these individual differences.

In contrast, economic theory is often based in a Hobbesian view of society in which there is intense competition for scarce resources, individuals act as agents for their self-interests, and outcomes are not necessarily fair (Brickley, Smith, & Zimmerman, 1995; Jensen & Meckling, ...
Given this view, economists are not interested in psychological processes or individual differences per se; this is because behavior is assumed to be shaped by a rational psychological process—the “rational agent” model (Jensen & Meckling, 1994). Put more clearly, even though economists realize that human behavior is not purely rational, this is a starting assumption for model development. Later, this assumption can be “relaxed,” and then more complex (and realistic) models can be developed. Economists refer to this process of relaxing an assumption as “complicating the model.” This approach and the starting assumption of there not being variability among individual-decision processes stands in stark contrast to the psychological approach that focuses on variability among individuals (i.e., individual differences).

Finally, in contrast to economics that emphasizes individual agency, the sociological view focuses on human behavior as constrained by features of society (Wrong, 1961). In this view, social position and institutions such as norms and status hierarchies shape behaviors (i.e., socialize individuals) and in so doing enhance the viability of both the individual and the social system (e.g., Parsons, 1951). For example, individuals may or may not be consciously aware of norms (e.g., acceptable patterns of behavior) yet will typically conform (i.e., behave in ways that will not be sanctioned). Sociology recognizes differences among people but, in contrast to psychology and economics, tends to de-emphasize the role of individual differences (psychology) and individual agency (economics) and focuses instead on the external structures, forces, and institutions that shape differences in individual and social system outcomes—and in turn, the institutions themselves.

Despite these theoretical differences, there are opportunities to bridge disciplinary divides. Consider once again Figure 1, which depicts the trinity of disciplines and areas of overlap. For example, Note 1 indicates that the divide between psychology and economics can be bridged by application of decision theory to managerial dilemmas (the most notable of these being prospect theory; Kahneman & Tversky, 1979). Indeed, scholars studying individuals and groups have used this theory to enrich our understanding of individual decisions and aggregate outcomes (Hales, 2009). The trinity of disciplines, represented in the figure by the number 2, has been called on to understand, for example, the evolution of entrepreneurial firms (e.g., Aldrich, 2006). A recent example of scholarship drawing on the trinity of disciplines is Eckhardt and Ciuchta’s (2008) examination of relationships between psychological traits of entrepreneurs, decisions entrepreneurs made about which opportunities to pursue, and the implications of these decisions for populations of technologies and opportunities.

Methodological Assumptions. From a practical standpoint, some of the most concrete differences in the trinity of disciplines underlying management are methodological. Indeed, differences between methodological preferences of economists and sociologists have been highlighted (e.g., Hirsch, Friedman, & Koza, 1990; Hirsch, Michaels, & Friedman, 1987). We add to this discussion by first incorporating psychology and then clarifying how methodological differences between disciplines result from each discipline’s unique historical conditions (Stigler, 1990). In the following paragraphs, we show that each of the trinity of disciplines has differing methodological hallmarks. Specifically, extending Hirsch, Michaels, and Friedman (1987), we describe the following disciplinary best practices that are listed at the bottom of Table 2: Psychology: latent constructs, economics: elegant models, and sociology: dirty hands.
For example, psychology evolved from two different camps—one that was primarily experimental and one that was primarily correlational. As a result, different types of statistics were dominant in each subarea, with experimentalists using the analysis of variance model proposed by Fisher and correlationalists using correlation and multiple regression developed by Galton. Indeed, these two camps rarely referenced each other until Cronbach’s (1957) APA presidential address in which he argued for unification of psychologists (and with a unifying methodology: the general linear model).³ However, regardless of camp, psychologists are schooled in gathering their own data and have always been sensitive to the construct validity of their measures, probably because psychological phenomena are latent constructs (i.e., not directly observable). As a result, psychologists are uniquely adept at developing multi-item scales (i.e., a set of survey questions that target the same underlying construct) to measure latent constructs and view these multi-item scales as more robust than single-item measures used by scholars in other disciplines. In turn, psychologists are also skilled in establishing “validity arguments” for the extent to which specific inferences drawn from a measure are warranted conceptually and empirically. In establishing such arguments, psychologists consider measurement reliability and various aspects of measurement validity, including construct, criterion-related, convergent, and discriminant validity (Nunnally & Bernstein, 1994). This focus on latent constructs persists today and is unique to psychology.

In contrast to psychologists who are often directly involved in tailoring measures and gathering data, economists traditionally have not viewed data gathering and measurement development as part of their role. This difference emanates from the view that markets are the laboratories of economists. In turn, economists are interested in attributes of individuals and entities that naturally emanate from market transactions (e.g., wages, prices, volumes, market values). These measures are often gathered by government entities such as tax, commercial, labor, and census agencies. Economists often combine numerous archival data sets gathered by these agencies. Throughout the analysis process, econometricians may refer to some of their measures as “crude” but will not be inclined to apply psychological concepts relating to latent constructs or establish construct validity arguments (e.g., Messick, 1995). However, these econometricians are likely to be highly attuned to the assumptions underlying analyses. Moreover, given fundamental differences in the type of data economists and psychologists gather (e.g., economic data often has true zeros), purely trained economists may have different interpretations than psychometricians of (a) what data is indeed “interval,” (b) what types of analyses (e.g., ordinary least squares regression) are appropriate for these data, and (c) whether the assumptions underlying such analyses must be confirmed. (Compare, for example, Nunnally & Bernstein, 1994, and Wooldridge, 2008.)

What makes economic scholarship unique is what economists call elegant or “clean” models. Such models are characterized by simplifying assumptions, relatively few variables, and a heightened sensitivity to potential endogeneity issues. These endogeneity issues may result from, for example, sampling bias or unobserved heterogeneity that is associated with managerial policy decisions. For a discussion of these endogeneity issues and methodological treatments, see Greene (2007) and Wooldridge (2008); for management examples that model these approaches and had important implications, see Leiblein, Reuer, and Dalsace (2002) and Shaver (1998). This focus on elegant models is unique to economics (Stigler, 1990).
Finally, turning to sociology, sociologists are known for varying somewhat from the deductive approach used by psychologists and economists. A hallmark of sociological research is a focus on inductive approaches that are often mixed method (i.e., apply both quantitative and qualitative methods) and encompass many constructs (Hirsch et al., 1987; Lieberson, 1985). Many of the constructs of interest to sociologists, such as institutions, social class, and gender, are often included in archival data sets or can be determined through analysis of artifacts. For example, some data may emanate from content analysis of marketing documents, newspaper articles, and financial reports (see, e.g., Beckman, Burton, & O’Reilly, 2007; Burton, Sorenson, & Beckman, 2002), and other data may come from interviews, focus groups, or participant observation. These examination and measurement approaches differ from the psychological focus on developing multi-item quantitative scales to measure latent constructs and the economic focus on simplifying assumptions and long-armed relationships with data sources. This penchant for qualitative research and realistic models underlies characterizations of sociologists as those with dirty hands (e.g., Hirsch et al., 1987).

In closing, among the trinity of disciplines, there are not only differing theoretical assumptions regarding human behavior but also differing methodological standards and conceptualizations of research excellence. As indicated earlier, from a methodological perspective, these distinguishing differences can be summarized as latent constructs (psychology), elegant models (economics), and dirty hands (sociology; see bottom of Table 2). Scholars conducting research that spans one or more system-level divides need to attend to three potential disciplinary divides (i.e., psychology and economics, economics and sociology, and psychology and sociology). When these three disciplinary divides are combined with the three system-level divides discussed earlier, management scholars must attend to six divides.

**Content Analysis**

To what extent does existing scholarship bridge system-level and/or disciplinary divides? To address this question, we conducted a content analysis of 300 management articles. We began by defining our sampling frame from well-accepted lists of top management journals (e.g., Short, Payne, & Ketchen, 2008; Van Fleet, McWilliams, & Siegel, 2000; Werner, 2002). From these lists, we maintained one to two specialty journals per subdomain and only those journals that publish theoretical and/or empirical pieces. In turn, the journals included in the analysis were *Academy of Management Journal, Academy of Management Review, Administrative Science Quarterly (ASQ), Journal of Applied Psychology, Journal of Business Venturing, Journal of International Business Studies, Journal of Management (JOM), Organizational Behavior and Human Decision Processes, Organization Science, Personnel Psychology, Strategic Entrepreneurship Journal,* and *Strategic Management Journal.* We should state up front that our intention is only in sampling from the various journals. Given that our purpose is simply to provide a snapshot into existing management research, rather than a comprehensive quantitative review, this sampling approach is sufficient for our purposes.

We created a database of 300 articles that contains 25 articles from each of these 12 journals. More specifically, for each journal, we randomly selected articles from issues published
between April 2007 and March 2009 until we identified 25 theoretical or empirical articles (editorials and book reviews were not included). This stratified random sampling minimized bias from special issues and provided equal representation of each journal regardless of the number of issues the journal publishes per year—or articles per journal issue (for example, some journals are published monthly and include 8-15 articles per issue, whereas other journals, such as ASQ, are published quarterly and include 3-7 articles per issue). Our sample contained 39% of the articles published in the 12 journals during the study time frame; a complete list of articles is available from the first author. This sample compares favorably with similar reviews, including the following JOM content analyses: Armstrong and Shimizu (2007), Short, Payne, and Ketchen (2008), and Werner (2002). In terms of coding, an author and colleague coded all articles, and colleagues coded a random sample (16%); interrater reliability was .98.

Note that methodological articles were not included. The reason was twofold. First, including methodological articles would greatly expand the scope of this study beyond the intended goals. Second, it is oftentimes difficult or impossible to determine whether a methodological article intended to bridge system levels or disciplines. Thus, to keep the scope manageable and coding interpretable, we had to exclude these articles. That said, we want to emphasize that methodological articles offer a potentially valuable mechanism for linking system levels and disciplines, and we return to this topic later in the article.

Findings

Table 3 provides a snapshot of the extent to which articles in the sample bridged disciplinary and/or system-level divides. Disciplinary foundations are listed in the top half of the table, and types of bridging scholarship are listed in the bottom half. The last row of the table is a summary reflecting the likelihood that a randomly selected article from the sample bridged either a disciplinary and/or system-level divide. The percentages listed in Table 3 are calculated by dividing the count of articles having the characteristic listed in a row by the total articles in that column. Consider, for example, BPS and disciplinary foundation. Of the 111 BPS articles we sampled, 13 had a theoretical foundation in psychology (as evidenced by, for example, drawing on a psychology theory and listing of psychology-based references such as the Journal of Applied Psychology, Organizational Behavior and Human Decision Processes, and/or the Annual Review of Psychology). Therefore, for our sample, the percentage of BPS articles having a psychological basis is 12%. The percentages for the BPS column (or across any row, for that matter) do not sum to 100, as the article characteristics noted at the far left are not mutually exclusive. Articles can indeed be based in multiple disciplines (top of Table 3) or bridge more than one type of divide (bottom of Table 3). The use of ratios and percentages (rather than other analytical approaches) and within-column (subdomain) calculations make the information contained in Table 3 robust to the differences in the number of articles considered for each subdomain.

Looking at the management domain as a whole, a single discipline does not predominate, and economic and psychology scholarship are the most prevalent (e.g., psychology = 46%,
Bonferroni-corrected pairwise comparisons (for all paired *z* tests: *df* = 299) did not reveal differences in the prevalence of either psychology and economics scholarship (*z* = .40, *p* > .05) or psychology and sociology scholarship (*z* = −1.85, *p* > .05). However, economics scholarship is more prevalent than sociology scholarship (*z* = −2.90, *p* < .05). The likelihood that any randomly selected article from our database is based in a discipline other than the trinity is small (1%).

Turning to whether, as a whole, management scholarship bridges divides, one third of our sample involved bridging disciplines (34%), and almost two thirds involved bridging one or more system-level divides (62%). The likelihood that an article bridged either a disciplinary and/or a system-level divide is 69%. One might expect that the likelihood of bridging either a disciplinary (34%) and/or system-level (62%) divide would be the sum of the percentages (sum = 96%). That this is not the case indicates that both disciplinary and system-level divides were often bridged simultaneously; indeed, within 27% of articles, both disciplinary and system-level divides were bridged. This means that more than 40% (43.5%) of scholarship that bridged system-level divides also bridged disciplines. This supports our argument that attention to disciplinary divides is warranted when addressing system-level divides.

The remaining columns of Table 3 relate to subdomains. Beginning with the disciplinary foundations listed in the top rows of Table 3, the percentages listed across each row support economics = 48%, sociology = 37%). Bonferroni-corrected pairwise comparisons (for all paired *z* tests: *df* = 299) did not reveal differences in the prevalence of either psychology and economics scholarship (*z* = .40, *p* > .05) or psychology and sociology scholarship (*z* = −1.85, *p* > .05). However, economics scholarship is more prevalent than sociology scholarship (*z* = −2.90, *p* < .05). The likelihood that any randomly selected article from our database is based in a discipline other than the trinity is small (1%).

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our earlier suggestion that subdomain scholarship is often aligned with one or two of the trinity of disciplines. Specifically, HRM and OB scholarship is highly likely to be based in psychology (87% and 88% of articles, respectively). As implied earlier, remaining subdomains have a relatively balanced reliance on both economics and sociology. Therefore, if a scholar is bridging subdomains (e.g., HRM and ENT; OB and BPS), the scholar may often need to bridge disciplines. Turning to the bottom of Table 3 and the likelihood of bridging disciplines, within our sample the likelihood that a randomly selected OMT, ENT, or BPS article bridged disciplines is about one-in-two (52%, 48%, and 45%, respectively). In contrast, bridging of disciplines was unlikely in HRM (9% of articles). These results indicate that within our sample, and with the exception of HRM, bridging of disciplines is somewhat common (with percentages of articles bridging disciplines ranging from 31% to 52%).

Unidisciplinary scholarship in and of itself is not problematic; it is when a single discipline is used to the relative exclusion of other disciplines that there is risk for problematic contradictory scholarship. An example of such scholarship was mentioned earlier: the longstanding belief that hiring those with high cognitive ability will result in organizational productivity gains despite other subdomain and disciplinary perspectives that argue to the contrary. Indeed, Ployhart (2006) noted that much staffing research is disconnected from the broader literature in strategy, and as a result, staffing is frequently not seen as being capable of offering strategic value. This example relates to HRM and BPS, and the pattern for HRM in Table 3 indicates that, for the sample of journals and articles examined here, HRM scholarship is not as well linked to a range of disciplinary perspectives or the management whole as other subdomains are. In fact, the HRM subdomain stands out in terms of its relative lack of research that bridges disciplines or levels. Likewise, as indicated in Table 3, the limited use of psychology in BPS scholarship supports a recent call for closer integration of psychology and economics to address such topics as decision processes of top-management teams and the role of intangible resources in competitive advantage (Barney, Ketchen, & Wright, 2008; Lovallo, Powell, Fox, & Teece, 2008). Across subdomains, further integration with other disciplines, system levels, and subdomains would provide opportunities to triangulate findings and minimize contradicting managerial implications.

Next, we turn to the bottom of Table 3 and the bridging of system-level divides. Recall that within our sample, the percentage of subdomain articles bridging disciplines varies widely by subdomain. Similarly, the percentage of subdomain articles bridging system-level divides also varies widely (38%-84%). Of note is that the three subdomains with the highest prevalence of scholarship bridging system-level divides each have a primary focus on the organization (BPS = 82%; ENT = 84%; OMT = 82%). The high prevalence of scholarship bridging system levels within these subdomains is somewhat expected given that from the organization level, one may bridge two ways: both “up” to economic and social systems and “down” to individuals and groups. In contrast, all other subdomains may bridge in only one direction (e.g., “up” from the individuals and groups system level). Perhaps this is why bridging of system-level divides is least common in HRM (38% of articles) and OB (47% of articles).

Finally, the percentages of articles bridging either a disciplinary and/or system-level divide are listed in the last row of Table 3. Once again, as indicated by the lack of an additive relationship between the percentages of articles bridging disciplines and system-level divides, scholarship bridging system-level divides often bridges disciplines. This finding supports
our argument that attention to disciplinary divides is warranted when addressing system-level divides.

A second set of findings is provided in Table 4. These findings focus on management as a whole. The aim is to drill down into information provided in Table 3 and to identify exemplars. At the top of the table, research that is at a single system level is listed; at the bottom is research that bridges system-level divides. There is a column for unidisciplinary and multidisciplinary scholarship. Each cell contains the number of articles (and the percentage of management scholarship) having the characteristics noted for that row. Specific exemplars of scholarship for each cell of the table are provided in table notes (b through h). Finally, the bottom row contains the totals for each column. A chi-square test was conducted to examine

Table 4
Management Scholarship by Category and Disciplinary Integration

<table>
<thead>
<tr>
<th>Category</th>
<th>Disciplinary Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unidisciplinary (%)</td>
</tr>
<tr>
<td>Single system level</td>
<td></td>
</tr>
<tr>
<td>Individuals and groups</td>
<td>67 (22.3)</td>
</tr>
<tr>
<td>Organizations</td>
<td>14 (4.7)</td>
</tr>
<tr>
<td>Economic and social systems</td>
<td>9 (3.0)</td>
</tr>
<tr>
<td>Bridges system levels</td>
<td></td>
</tr>
<tr>
<td>Individuals and groups within organizations</td>
<td>22 (7.3)</td>
</tr>
<tr>
<td>Individuals and groups within economic and social systems</td>
<td>14 (4.7)</td>
</tr>
<tr>
<td>Organizations within economic and social systems</td>
<td>55 (18.3)</td>
</tr>
<tr>
<td>Individuals and group within organizations that are in turn, embedded within economic and social systems</td>
<td>13 (4.3)</td>
</tr>
<tr>
<td>Total</td>
<td>202 (67.3)</td>
</tr>
</tbody>
</table>

Within each cell, the count of articles is listed; the percentage of the management domain’s scholarship is in parentheses.

A unidisciplinary exemplar of this scholarship is Zimmerman (2008); a multidisciplinary exemplar is Beardon and Connolly (2007).

A unidisciplinary exemplar of this scholarship is Fenton-O’Creevy, Gooderham, and Nordhaug (2008); a multidisciplinary exemplar is Peng, Wang, and Jiang (2008).

A unidisciplinary exemplar of this scholarship is Judge, Douglas, and Kutan, 2008; a multidisciplinary exemplar is Yin and Shanley (2008).

A unidisciplinary exemplar of this scholarship is Michel, 2007; a multidisciplinary exemplar is De Luque, Washburn, Waldman, and House (2008).

A unidisciplinary exemplar of this scholarship is Semadeni, Cannella, Fraser, and Lee, 2008; a multidisciplinary exemplar is Hales (2009).

A unidisciplinary exemplar of this scholarship is David, O’Brien, and Yoshikawa (2008); a multidisciplinary exemplar is Laplume, Sonpar, and Litz (2008).

A unidisciplinary exemplar of this scholarship is Guthrie and Datta (2008); a multidisciplinary exemplar is Simons and Roberts (2008).
the independence of disciplinary and system-level divides (which are the dimensions of Table 4). The results indicate that disciplinary and system-level divides are not independent ($\chi^2(6) = 30.43, p < .05$). This result supports our argument that management scholars bridging system-level divides need to attend to both system-level and disciplinary divides.

To better illustrate the scholarship contained within each cell of Table 4, consider the following examples. We begin at the top left of Table 4 with scholarship at a single system level that focuses on individuals and groups. About one fifth (22.3%) of our sample of management research is at this system level and is unidisciplinary. An exemplar drew from psychology to examine associations between individual personality characteristics and decisions to quit a job (Zimmerman, 2008). In contrast, multidisciplinary research on individuals and groups is not common (3.3% of management scholarship sampled). Most of this scholarship was based in behavioral economics (which integrates psychology and economics). For example, Beardon and Connolly (2007) integrated psychological and economic perspectives on decision making to understand better the role of satisficing in multiattribute sequential-search processes.

Next, we turn to the middle of Table 4 and scholarship that bridges system-level divides. About one tenth (13.3%) of management scholarship sampled involves bridging of individuals and groups with organizations. A unidisciplinary exemplar (Michel, 2007) used psychological approaches to examine how organizations (banks) address the cognitive uncertainty new employees (bankers) face. Implications were defined at both the individual and organization levels. A multidisciplinary example (De Luque, Washburn, Waldman, & House, 2008) considered relationships between CEO values, follower perceptions of CEOs (i.e., as autocratic or visionary leaders), and both individual-level outcomes (in-role and extra-role behaviors) and firm performance.

Finally, turning to the bottom of Table 4, we note that 10% of the management scholarship we sampled bridges all three system-level divides. As a multidisciplinary exemplar, Simons and Roberts (2008) examined how an entrepreneur’s prefounding experiences (e.g., employment within the wine industry) was associated with both that entrepreneur’s likelihood to pursue a new market (i.e., nonkosher wine production in Israel) and the organizational form the entrepreneur would use to exploit the market. The study also considered the culmination of these individual and organizational influences on the bifurcation of the Israeli wine industry (i.e., into kosher and nonkosher wines).

Roadmaps for Research That Bridges Divides

We have argued that management scholarship is divided in terms of both system levels and disciplines, and that these divides become hurdles for conducting integrative research. In this final section, we provide recommendations for identifying research questions that bridge divides; we accomplish this by identifying classic texts on the topic and providing our summary observations. Then, we describe a process useful for addressing research questions that involve bridging of system-level and/or disciplinary divides. Specifically, we provide a roadmap that guides one through the specific intellectual steps, including theoretical and methodological considerations, required to begin to bring together multidisciplinary and/or system-level perspectives.
Identifying Questions That Bridge Divides

Many excellent resources exist on how to identify compelling research questions (e.g., Lawler, 1999; Lieberson, 1985; Mohrman, Gibson, & Mohrman, 2001; Weick 1989). Our intention is not to reiterate these works but rather to emphasize those aspects that focus on bridging levels or disciplines.

Focus on Phenomena. As suggested by others (e.g., Bartunek, 2007; Lawler, 1999; Mohrman et al., 2001), identifying research questions that bridge divides is really quite simple: Begin by considering real-world phenomena. In this view, management is an applied field, and therefore, in some way, scholarship ties to the real-world phenomena practitioners face. Unlike academics, practitioners are not able to partition the issues they face by system level or discipline. Similarly, practitioners do not have the ability to extract an entity from the organizational, economic, and social systems in which the entity is embedded. Therefore, by studying a phenomenon from a practitioner’s perspective, it is likely that system-level and disciplinary divides will be bridged.

An excellent example of this approach is provided by Cascio and Aguinis (2008). In their review of IO psychology research, they note that real-world phenomena have evolved in ways quite different from the way academics continue to study them. One could use their review as a way to reorient HRM foci onto problems that likely span levels and disciplines. Schneider and Bowen’s (1995) book on customer service provides another excellent example as this pioneering scholarship considers service performance from individual, organizational, and customer perspectives.

Link to the Organization. A second strategy involves linking one’s research orientation to the management whole. It is naive to expect scholars from different levels to share an interest in all of their colleagues’ outcomes of interest. However, management subdomains share the organization system level (i.e., as either a micro or macro entity; see Table 1). Therefore, to bridge divides, one can link one’s research to the organization. Indeed, because organizations are the common tie that binds management scholars, regardless of domain, outcomes at the organization level are of such central importance that they could serve as linking mechanisms and points of integration for management scholars. For example, even though most research has examined personnel selection from the individual level, there may be new insights to be gained by studying in what conditions and how (i.e., through what mechanisms) the hiring of better employees is associated with organizational effectiveness (e.g., Ployhart, Weekley, & Ramsey, 2009).

Borrow Theories. Many (e.g., Klein & Kozlowski, 2000; Rousseau, 1985; Weick, 1989) have implied what Whetten, Felin, and King (2009) term “theory borrowing.” Theory borrowing can occur between disciplines, which Whetten and colleagues call “horizontal” theory borrowing, and between levels, or “vertical” theory borrowing. To borrow theory, one examines streams of research and identifies inconsistencies between disciplines or system-level perspectives. One can start with noting the assumptions the views share and do not share (such as those noted in Table 2). One can then lay out the views’ different and similar
antecedents and consequences. What constructs and processes change? What constructs become irrelevant? It is in these disconnects—or divides between scholarship—that new insights are often found.

Turning to system levels, one can take entire theories or research findings and move them progressively up or down levels to learn where inconsistencies exist. We do not mean to suggest that one can generalize the findings from one level to other levels—to do so is to commit a cross-level fallacy (Rousseau, 1985). Rather, our argument is that one should juxtapose constructs, theories, or research findings between two or more levels to identify inconsistencies. Whetten et al. (2009) provide guidance on level fallacies and other considerations one must keep in mind when theory borrowing.

Connect Through Methods. Bridging methods across disciplines provides a paradoxical challenge. At a surface level, it can appear that there is little commonality across disciplines. For example, strategy scholars tend to use econometric models because their research flows from economics. HRM and OB scholars tend to use hierarchical linear modeling (HLM) because these subdomains stem from psychology and education. There are nontrivial differences in the terminology used with these approaches. For example, what is called a random effect in econometric growth modeling used by BPS and ENT scholars is called a fixed effect in HLM models used by HRM and OB scholars. Consider a sample involving 100 stores for which store-level human capital and store-level performance measures are available. The association between store-level human capital and store-level performance is modeled. There is unobserved (yet constant) heterogeneity at the store level for factors such as location and years of operation. In an econometric model, the store’s location is called a fixed effect because it is constant for each observation (i.e., location does not change for a store), whereas in an HLM model, location can be modeled as a random effect because stores vary by location.

As a result, it is common for reviewers and authors to “speak past each other,” each emphasizing the statistical approach he or she is familiar with. This in turn makes it difficult to publish research that bridges divides simply because scholars do not have a shared mind-set or terminology regarding methods. Further, even when there is agreement, disciplinary traditions regarding terminology can make communication difficult. Such differences can create the impression that methodological information does not cross over to other subdomains or disciplines. Indeed, of note in the content analysis was the finding that there were few citations between disciplines or subdomains of well-established guides for bridging system-level divides. For example, BPS and ENT articles in which system-level divides were bridged were unlikely to cite HRM and OB guides such as Klein and Kozlowski (2000) and/or Rousseau (1985). Yet these pioneering works were highly cited in HRM and OB and can provide valuable insights for scholars in other subdomains.

Yet, as established earlier, each discipline has traditions that can be seen as best practices across management. For example, econometric approaches to address the unobserved heterogeneity associated with managerial choices (e.g., Chadwick, 2009; Leiblein, Reuer, Dalsace, 2002; Shaver, 1998) and psychometric approaches to craft construct validity arguments (e.g., Cronbach & Meehl, 1955; Messick, 1995) are best practices. However, our analysis revealed they seem to be little used outside the disciplinary tradition. If so, this lack of crossover
within management is problematic for two reasons. First, increased use of methodological best practices, regardless of the discipline or subdomain of origin, could improve the rigor of management research. For example, many have argued that BPS scholarship could be improved by applying construct validation approaches to economic analyses of intangible assets (e.g., Venkatraman & Grant, 1986). Second, innovations are often discovered or created at research taking place at the boundaries and intersections of disciplines and subdomains (Davis, 1971; Mahoney & McGahan, 2007). Such advances are not only theoretical and empirical but also methodological. Indeed, there may be untapped opportunities to create synergies among disciplinary best practices of latent constructs, elegant models, and dirty hands.

Thus, by recognizing the importance of methods as a source of integration, it becomes possible to create more shared perspectives and engage in productive academic debates. Important advances will come from reflection on how to build on each other’s insights using “borrowed” methods that reflect different disciplinary traditions. In this regard, publishing in and reading journals such as Organizational Research Methods provides an excellent opportunity for integration (e.g., see Aguinis, Pierce, Bosco, & Muslin, 2009). Moreover, as noted earlier, there is a clear need for doctoral training and textbooks that make management scholars aware of these disciplinary differences.

Bridging Divides

There are many excellent subdomain-specific sources that detail steps to bridge level divides (e.g., BPS: Short et al., 2003a; HRM and OB: Klein, Dansereau, & Hall, 1994, and Kozlowski & Klein, 2000; OB: Rousseau, 1985). As indicated, there is an opportunity to leverage this information across subdomains and disciplines. As we have illustrated, scholars must consider not only system-level divides but also disciplinary divides; however, these sources focus on system levels and do not address how system-level and disciplinary divides can often coincide and thus must be dealt with jointly. Moreover, bridging of disciplinary divides may offer important advances in management theory, research, and methods. Therefore, we provide a roadmap of how to bridge disciplines and system levels that avoids use of discipline-specific jargon.

Figure 2 offers a roadmap that guides one through the specific intellectual steps required to bridge disciplinary and system-level divides. Specifically, the distinction between bridging disciplinary and system-level divides we noted at the start of this article is reflected in the roadmap. We believe the disciplinary divides must be considered before system-level divides, given the important theoretical and methodological challenges disciplinary divides present (see Table 2). The left side of Figure 2 focuses on steps to reconcile disciplinary divides; the right side of Figure 2 focuses on system-level divides. As noted above, the process begins with framing research questions that may create a bridge (real-world phenomena likely present such opportunities). From there one begins with the “start here” box in the upper-left corner of the roadmap. If one’s research is multidisciplinary, one is guided through the left side of Figure 2. If this research is also multilevel, one continues to the right side of Figure 2. In contrast, if one’s research is unidisciplinary and multilevel, one is guided to the
right side of Figure 2. (If one’s research is unidisciplinary and does not cross levels, one is guided across the top of Figure 2; this is because the purpose of the figure is to outline the often overlooked steps required to bridge disciplinary and system-level divides, not detail the basic research process.)
**Bridging Disciplines.** Those with research questions involving multiple disciplines are guided to the far left of the roadmap. As indicated in Box 1.1 (terminology), those who are bridging disciplines must be alert to differences in the way that common terms are used. Indeed, just as there are many examples of the meanings associated with “micro” and “macro” (see Table 1), so are other words used in different management domains with different meanings. For example, consider *performance*. To an HRM scholar working from a psychology perspective, an individual’s performance is viewed (paradoxically, given psychology’s focus on the individual) from the organization’s perspective, namely, how well one performs one’s job relative to expectations. As such, individual performance is conceptualized and measured with tools the organization creates, such as performance appraisals and business process metrics. In contrast, an individual’s performance from an economic and sociological perspective is viewed from the individual’s perspective, namely, one’s current wages, career-long earnings, and labor mobility (e.g., movement through promotion systems, salary increases achieved by being poached). This example illustrates the nontrivial potential for miscommunication when colleagues with differing disciplinary backgrounds interact.

Next, based on the premise that a starting point for all scholarship is theoretical assumptions (Zahra, 2007), Box 1.2 (theoretical assumptions) requires one to make explicit the assumptions that exist within each discipline. For management scholars, two sets of assumptions are of vital importance: theories of human behavior and views of society (i.e., an individual’s relationship to society). As indicated in Table 2, there are nontrivial differences between disciplines that must be either reconciled or at least acknowledged. There are also epistemological assumptions to consider, such as the discipline’s view of the relationship of an entity (e.g., an individual, a firm) to the broader whole in which it is embedded (Von Bertalanffy, 1968). The study of such part–whole relationships is the focus of *mereology*. These assumptions warrant attention as mereological relationships underlie many of the interesting question propositions identified by Davis (1971).

Turning to Box 1.3 (bridge disciplines), the focus shifts to the actual bridging of disciplines. There are two approaches to consider. First, one can decide to acknowledge the differences but not reconcile them (either because it is not necessary for the research question or because one finds them irreconcilable). Acknowledgment of differences is important given the demands of multidisciplinary review processes. Moreover, the differing assumptions could be used to clarify boundary conditions, or the specific conditions under which the differing predictions are expected to hold. Second, one may try to reconcile the differences. This may take the form of identifying a single assumption that is held by those with one view of the entity, but not a second body of scholars studying the entity. This approach may be particularly effective for scholarship that bridges between levels that are based in differing disciplines. Information provided in Table 2 provides a starting point for such analysis. As one example, consider trust within top management teams. The very different economic and psychological views of trust could be juxtaposed (see, for example, Alvarez, Barney, & Bosse, 2004). Differences between the theoretical assumptions might be addressed by creation of new assumptions (called *bridging assumptions*) or premises that exist solely to reconcile theoretical differences.

If the research is not empirical, one follows the roadmap next to bridging system-level divides (if applicable). However, if the research is empirical, then one must address potential
differences in methodological standards (Box 1.4), some of which we noted in Table 2. Authors will likely find considerable value in describing why they chose a particular methodology, even though it may be a methodology that is commonly used within their discipline. As just a simple example, when modeling longitudinal data, strategy researchers tend to use econometric growth models whereas HRM and OB researchers tend to use HLM models. In such an instance, it is often helpful to explain the approach, why it is used, its prevalence in one’s discipline, and how it compares to other disciplinary approaches.

**Bridging System Levels.** Several subdomain and discipline-specific sources describe how to conduct research that bridges levels. We refer readers to Kozlowski and Klein (2000), Lieberson (1985), Ployhart and Schneider (2005), and St. John (2005), who all provide specific steps to be followed when conducting multilevel research. Our recommendations summarize these approaches in terminology that has common meaning across the trinity of disciplines underlying management (see Figure 2, Boxes 2.1, 2.2, etc.).

The first two steps require one to articulate the unit of theory, measurement, and analysis for the dependent variable. According to Kozlowski and Klein (2000), the level of theory is the level at which the focal construct is conceptualized to exist, and the level of measurement is the unit of analysis at which the construct is assessed. The level of aggregation is defined here as the unit of analysis to which the measurements are combined (or disaggregated). Box 2.1 (dependent variable) suggests that one start by considering the dependent variable. For example, as noted above, one cannot simply take terms such as performance as a given. Rather, one needs to articulate the level at which one wants to generalize about performance and align the level of theory, measures (and in turn aggregation or disaggregation), and analysis to that level. This alignment needs to incorporate the perspective taken regarding performance (e.g., the individual’s perspective or the organization’s perspective) and the level at which performance is measured (e.g., the individual, an establishment) and to provide theoretical and empirical justification of the aggregation (or disaggregation) of these measures to the level of analysis. Likewise, Box 2.2 (independent variables) requires one to articulate the level of theory and measurement for the independent variable. For example, climate perceptions may be conceptualized as a firm-level phenomenon, but they are measured via the perceptions of individuals (e.g., Schneider, White, & Paul, 1998) and aggregated to the organization level.

Next, one hypothesizes the nature of within-level relationships (if relevant). For example, a study that examines both how individual differences relate to individual performance and how human capital relates to firm performance should identify the conceptual basis for each within-level relationship. It is critical to understand that at this point, one is likely “living within” the assumptions of the relevant level and discipline. Hence, Box 2.3 (within-level relationships) is generally a straightforward application of past unidisciplinary, unilevel research.

However, in the next step (Box 2.4: bridging levels), one may then challenge or question these unilevel and unidisciplinary assumptions. Indeed, Boxes 2.3 and 2.4 together present the “juxtaposition” approach to identifying research questions we noted earlier. One particularly important means of reconciling these inconsistencies is specifying theory regarding how constructs and processes operate across levels. There are disciplinary differences in the
tendency to aggregate (or disaggregate) data and the theoretical and methodological standards for these important and rather complex processes. We refer readers to Chan (1998) and Kozlowski and Klein (2000) for psychometric perspectives, Wooldridge (2008) and Felin and Foss (2005) for econometric perspectives, and Lieberson (1985), Hannan (1971), and Singleton and Straits (2010) for sociological perspectives.

If the research is theoretical, one may then proceed directly to final design (“End” box in Figure 2). On the other hand, if the research is empirical, then again, one needs to argue for use of the particular approach to the level of theory, measurement, and analysis (Box 2.5). In this process, one may need to provide support (e.g., intraclass correlations; rwg) for aggregation (or disaggregation) from the level of measurement to the level of analysis. Such empirical issues are beyond the scope of this article, but readers should consult Bliese (2000) and LeBreton and Senter (2008) for psychometric perspectives, Wooldridge (2008) for econometric perspectives, and Denzin (1978) and Miller and Salkind (2002) for sociometric guidance.

Conclusion

The premise of this article is that there is not one micro–macro divide, but rather there are various divides within management scholarship, involving both system levels and disciplines. Our aim has been to demonstrate that the differences among the three micro–macro divides and disciplines underlying management scholarship have nontrivial theoretical and empirical implications for those wishing to bridge divides. We then have provided the tools to guide one through the specific steps in identifying, framing, and conducting such research through the various tables, figures, and text.

Indeed, if one is interested in thinking more broadly about one’s research and bridging divides, this article guides one from start to finish. To target untapped opportunities, information has been provided in Tables 3 and 4 and the Roadmaps section. The specific steps to frame and conduct scholarship that bridges disciplinary and/or system-level divides have been detailed (Figure 2). We have also provided resources for scholars to use to embrace the richness of multidisciplinary perspectives (Table 2) and “signal” the backgrounds of reviewers from which the most helpful feedback may be obtained (Tables 3 and 4).

In closing, this article shows that it is a misconception or “myth” to believe there is a single micro–macro divide within management. Recognizing that there are both system-level and disciplinary divides, and that true integration of management scholarship will require addressing both, is a first step toward creating a more unified perspective of management research. Doing so will not only help increase the theoretical and empirical rigor of our research, but also likely make it more relevant to the broader business community.

Notes

1. We use the terms groups and teams interchangeably for present purposes, recognizing that teams and groups are not the same. Moreover, we realize that within some areas (OB), there is a distinction between individuals and groups (they obviously are different entities). The same is true, for example, in HRM, with
distinctions between individuals and dyads; in BPS and ENT, with distinctions between strategic groups and industries; and in IB, with distinctions between subsidiaries and multinational enterprises. However, our focus is the broader management domain, and hence we do not discuss distinctions between these “intermediate” system levels even though we recognize such distinctions exist. Such an approach does nothing to diminish the points we raise in this article.

2. Significant strides have been made in bridging psychology and economics at the individual and groups system level; consider for example the field of behavioral economics. However, as will be indicated in Table 4, this significant progress has not yet extended to scholarship at other system levels (e.g., the organization) or scholarship attempting to bridge system levels.

3. It is interesting to note that the field of management is following a similar trajectory. Strategy scholars draw frequently from economics and tend to use econometric models; HR and OB scholars draw frequently from psychology and tend to use general linear or hierarchical linear models. Calls to narrow the micro–macro divide (e.g., Aguinis, Boyd, Pierce, & Short, 2008; Hitt, Beamish, Jackson, & Mathieu, 2007; Wright & Boswell, 2002) are working to serve the same purpose as Cronbach’s observation.

References


