Evidence-Based Management in "Macro" Areas: The Case of Strategic Management

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Abstract

Despite its intuitive appeal, evidence-based management (EBMgt) faces unique challenges in "macro" areas such as Organization Theory and Strategy Management, which emphasize actions by organizations, and business and corporate leaders. The inherent focus on complex, multi-level and unique problems present serious challenges. EBMgt will nurture the establishment of a new model of research that is not only cumulative in its knowledge-building but also promotes engaged scholarship. Further, the uncertainty and conflict that characterize "macro" decision contexts heighten the need for EBMgt. We put forward four recommendations to advance EBMgt: (1) using more sophisticated meta-analyses; (2) providing syntheses that go beyond quantitative summaries; (3) engaging in a disciplined conversation about our implicit "levels of evidence" frameworks; and (4) developing decision supports.

Keywords: Strategic Management
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           Collaborative Research
           Decision Supports
           Engaged Scholarship

Evidence-based management (EBMgt) involves a community of practice whose members learn by respectfully collaborating among practitioners, educators, and researchers (Rousseau, 2007). Over time, EBMgt will be iterative, transforming into shared understandings, structures, and best practices (Aram & Salipante, 2003; Carlile, 2004). Evidence suggests constructs and if-then relationships possessing both internal and external validity, which informs the decision process. Evidence is enhanced by an accumulated body of learning and by triangulation across methods and types of studies (Jick, 1979; Mahoney, 1993; Van de Ven, 2007). EBMgt not only emphasizes the use of evidence but also focuses on making organizational decisions that take into account practitioner experiences. Although all meaningful research is eventually aimed at influencing practice, the EBMgt movement has the potential to significantly change how we do research in the "macro" sub-fields of (business and corporate) Strategy and (organizational design in) Organization Theory (OT) since the macro side of the aisle -- more so than in micro fields such as organizational behavior and human resource management -- is characterized by multi-level phenomena and divergent approaches. EBMgt can help to bring some harmony and discipline to this research.

Since first articulated by Rousseau (2006), EBMgt has evolved through successive conceptualizations. Beginning from the definition "translating principles based on best evidence into organizational practices" (Rousseau, 2006: 256), the initial characterization of EBMgt highlights learning about cause-effect connections, isolating variation that affects outcomes, building an evidence-

respecting culture and community, developing decision supports that incorporate evidence, and focusing on the practice of management as informed by the best evidence. Subsequently, Rousseau, Manning and Denyer (2008) consider the role of the scholarly community in developing the ingredients of EBMgt. Systematic reviews are identified as the preferred mode of evidence synthesis, with elaboration of four forms of synthesis – aggregative, integrative, interpretive, and explanatory. Tranfield, Denyer and Smart note that: "Systematic reviews differ from traditional narrative reviews by adopting a replicable, scientific and transparent process … that aims to minimize bias through exhaustive literature searches of published and unpublished studies … (2003: 209).

More recently, conceptualizing EBMgt as a family of approaches that support decision-making, Briner, Denyer and Rousseau (2009) assert that it is something that is done by practitioners, not scholars, whose role is that of providing the infrastructure. In this chapter, we differ somewhat from Briner, Denyer and Rousseau's (2009) position that the relevance of EBMgt to scholars is largely from the standpoint of providing infrastructure. For example, the EBMgt movement can substantially change how we do research in Strategic Management.

To explore this theme, the paper proceeds as follows. The next section considers the challenges of EBMgt in Strategic Management and why EBMgt is needed. The subsequent section provides implications for EBMgt in Strategic Management. The final section provides discussion and conclusions.

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Challenges of EBMgt in Strategic Management

Although well established in several disciplines, EBMgt runs into some unique challenges in more "macro" areas, and especially in the field of strategic management. We classify these special challenges into three categories: philosophical, methodological, and institutional.

At the philosophical level, EBMgt connects to a central feature of strategic management, which is its emphasis on the integrative view, the general management perspective, and on large, unique, history-dependent problems (Eisenhardt, 1989; Mahoney & McGahan, 2007). Some implications of such emphasis include: the continuing dominance of case studies in research as well as teaching, multi-level narratives that meld together individual leaders with firm-level factors set in a historical context, and the integration of economic and behavioral perspectives (Gimeno, Folta, Cooper & Woo, 1997; Mahoney, 2005).

To illustrate the emphasis on unique events, -- such as lessons learned from the Columbia Shuttle Disaster or by examining first-mover advantages achieved by Coca-Cola internationally during WWII -- a key paper about the challenges of learning in a "macro" context was titled: "Learning from samples of one or fewer" (March, Sproull & Tamuz, 1991). This issue goes beyond the bias to novelty remarked upon by Rousseau, Manning & Denyer identifying as a key driver of our failure to use evidence well, the habit of "overvaluing novelty to the detriment of accumulating convergent findings" (2008: 476) in management and organization science. The emphasis on unique problems, settings and historical pathways is endemic to the Strategic Management field. A recent example of this

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orientation is the problem-finding– problem-solving perspective (Heiman, Nickerson & Zenger, 2008; Nickerson & Zenger, 2004), which departs from the conventional framing of strategy as the search for competitive advantage to one of how leaders find new problem-solution pairings that have the potential to yield substantial and continuing value streams. The co-existence of, on the one hand, research examining unique events, and on the other hand, an emphasis on reductionist research that can push for overly simplified theory that fails to capture complex contextual interactions of importance, contributes to the "split personality" of the field. In a nutshell, the "macro" nature of the field exacerbates the problem of dueling models determining what is knowable from rich contextual research and from reductionist methodologies that can run roughshod over institutional and contextual factors.

At the methodological level, a fundamental question is raised by the fact that "macro" fields are characterized by the near-total absence of experimental studies, since it is difficult to set up experiments in which complex organizations are randomly assigned to different conditions and their outcomes compared. Thus, whether qualitative (case studies) or quantitative (large-sample) studies, most empirical evidence in Strategy stems from observational studies. In contrast, the "micro" disciplines are rich in experimental studies. This contrast raises an interesting question: How might doing meta-analysis -- a key tool for synthesizing findings in the EBMgt toolkit -- on non-experimental data be different from doing meta-analysis on experimental data? Some controversy exists in evidence-based medicine about the relative status of meta-analysis of experimental data and meta-

analysis of observational data. The main issue then is whether meta-analyses of micro studies based on randomized trials will be inherently superior to meta-analyses of macro studies based on observation data. Concerning this issue, Egger, Schneider & Smith (1998: 141) make the following argument:

Meta-analysis of randomized trials is based on the assumption that each trial provides an unbiased estimate of the effect of an experimental treatment, with the variability of the results between the studies being attributed to random variation. The overall effect calculated from a group of sensibly combined and representative randomized trials will provide an essentially unbiased estimate of the treatment effect, with an increase in the precision of this estimate. A fundamentally different situation arises in the case of observational studies. Such studies yield estimates of association which may deviate from true underlying relationships beyond the play of chance. This may be due to the effects of confounding factors, the influence of biases, or both.

Although the position espoused by Egger, Schneider & Smith (1998) is by no means the final word on the topic, -- especially as methodologies utilizing observational data continue to advance -- it does offer food for thought from the standpoint of EBMgt in the "macro" subfields of management. In observational studies that are the norm in Strategy and OT, confounding factors may distort results. Further, recall that even where the original research studies may have controlled for a variety of factors, the meta-analysis does not take such controls into effect, as the primary input for the meta-analyst is the effect strength – most often, the raw correlation between X and Y.

At the institutional level, a significant "re-education" campaign may be necessary to disseminate the true role of systematic reviews and meta-analyses. Those of us who have tried to publish meta-analyses in the management field have found, in various degrees, pressure from reviewers and editors to use meta-analyses as yet another tool for theory building, not for genuine evidence accumulation.

Why Bother With EBMgt Then?

Why should "macro" scholars and practitioners adopt an EBMgt orientation despite these challenges? We provide two reasons in favor of such adoption. First, EBMgt will allow for the emergence of an engaged scholarship model that balances rigor and relevance to flourish in the strategic management field. Achievement of this goal is important in order for research to emerge in "Pasteur's quadrant" (Stokes, 1997) in which improved fundamental understandings and applications of findings are achieved (Tushman & O'Reilly, 2007). Second, EBMgt will mitigate barriers to learning that exist in complex organizations, which often pose significant problems in the form of cognitive biases in strategy. EBMgt can help practitioners to evaluate research results better. Practitioners may also better appreciate the research process including the identification of research problems and the relevance of research findings to practice.

Van de Ven's (2007) book, *Engaged Scholarship* -- in which research scholars are the focal audience -- provides a compelling model for thinking about impactful research in a way that emphasizes the interaction between scientists and

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practitioners. Scholars are not the only group to whom scholarship matters; practitioners, as sources of problems and data as well as users of solutions devised by scholars, are important stakeholders in scholarship (Lawrence, 1992). Thus, Van de Ven (2007: ix) calls for "Engaged scholarship [, which] is a participative form of research for obtaining the advice and perspectives of key stakeholders (researchers, users, clients, sponsors, and practitioners) to understand a complex social problem" (2007: ix). Van de Ven (2007) suggests that engaged scholarship produces more penetrating and insightful knowledge than would emerge if scholars and practitioners work in isolation. This view is consistent with the aspiration of EBMgt to close the "great divide" (Rynes, Bartunek & Daft, 2001; Rynes, Giluk & Brown, 2007) between research and practice. The diamond model (see Figure 1) proposes a process of (1) *problem formulation* (Delbecq & Van de Ven, 1971; Volkema, 1983); (2) *theory building* (Bacharach, 1989; Whetten, 1989); (3) *research design* (Denzin, 1978; Kaplan, 1964); and (4) *problem solving* (Ackoff, 1978; Polya, 1957). Such an approach is a participative form of research for obtaining the counsel and perspectives of key stakeholders (e.g., educators, researchers, and practitioners) for improved understandings of problems that are often of high complexity (Hodgkinson & Rousseau, 2009).

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Van de Ven's (2007) diamond model of engaged scholarship emphasizes an iterating cycle comprising four steps that show how theories, models, and

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research designs combine to produce solutions to problems that emerge from reality: problem formulation, theory-building, research design, and problem solving. In the problem formulation phase, the goal is to identify and understand a real-life problem worth solving through engagement with those who experience and know the problem first-hand; relevance is the key criterion. Relevance is found in generating insight practitioners find useful for understanding their own organizations and situations better than before (Vermeulen, 2005, 2007). In the theory-building phase, the goal is to construct and justify a theory that fits the identified problem, through engagement with knowledge experts in the disciplines relevant to the theory; validity is the key criterion. In the research design phase, the goal is to develop a variance or process model to test the theory, through engagement with methods experts as well as those others who provide data access; verisimilitude is the key criterion. Finally, in the problem-solving phase, the goal is to share and shape the findings with the intended audience; impact is the key criterion here. By linking the worlds of science and practice in this instructive iterative model, Van de Ven (2007) cuts the Gordian knot posed by the rigor versus relevance paradox that has plagued the macro field for so long.

In many ways, we can conceive of EBMgt as an approach that will advance the agenda of engaged scholarship, and help anchor Strategy scholarship in the concerns of our stakeholders and ultimately in reality. The central mission of the enterprise of EBMgt and engaged scholar-ship is to conduct research that both advances scientific inquiry and enlightens practice (Simon, 1976). Van de Ven (2007) notes, however, that this mission is an elusive ideal. Indeed, studies

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show that practitioners often fail to adopt the findings of management research (Rynes, Bartunek & Daft (2001); Tranfield, Denyer & Smart, 2003). Criticisms for this great divide between theory and practice have flowed in both directions (Argyris & Schön, 1978; Hodgkinson, 2001; Van de Ven & Johnson, 2006). Management educators and researchers, for example, are criticized for not adequately considering how to put their abstract knowledge into practice (Bartunek, 2003; Beyer, 1997; Beyer & Trice, 1982). Practicing managers, as well, are criticized for not being aware of relevant research and not appreciating enough the "know-why" of practice (Latham, 2007; Van de Ven, 2002; Weick, 2001). Part of the reason here may be that educators typically do not educate managers to know or use scientific evidence (Rousseau, 2006: 262).

Often the gap between theory and practice is characterized as a knowledge transfer problem in which we simply need to translate and diffuse knowledge into practice (Cascio, 2007; Hambrick, 1994; Keleman & Bansal, 2002). A deeper understanding of the challenges, however, is required (Kieser & Leiner, 2009; Schön, 1983; Simon, 1996). For example, Polanyi (1962) and Nonaka (1994) make important distinctions between explicit scientific knowledge and more tacit practical knowledge. The knowledge of science and practice are typically *complementary.* Rather than regarding tacit practical knowledge as a derivative of scientific knowledge, practical knowledge is regarded as a distinct mode of knowing in its own right (Pearce, 2004; Van de Ven & Johnson, 2006). Indeed, Van de Ven maintains that: "Exhortations for academics to put their theories into practice theories into practice and for managers to put their practice into theory

may be misdirected because they assume that the relationship between knowledge of theory and knowledge of practice entails a literal transfer or translation of one into the other. Instead, I suggest taking a pluralistic view of science and practice as representing distinct kinds of know-ledge that can provide complementary insights for understanding reality" (2007: 4).

Motivating practitioners to give attention to scholarly evidence will be impossible unless our research is seeded by a real-life problem that is worth solving. The validity of theories will be difficult to justify in the theory-building phase unless we have knowledge of the cumulative empirical support that theories enjoy. The research design phase, as well as its key criterion, verisimilitude, is difficult to address in the absence of clear links to extant evidence. Finally, sharing the results of the research with practitioner stakeholders in ways that take note of their interpretations as well as motivate them to deploy the solution found is also a critical set of steps that are integral to EBMgt.

Going further still, the gap between theory and practice may be a knowledge production problem (Huff, 2000; Huff, Tranfield & Van Aken, 2006). There is not only a knowledge transfer problem, in which relevant management research does not reach practitioners (the "lost in translation problem") but also a knowledge production problem in which managerial relevant knowledge is not even created (the "lost *before* translation problem") (Markides, 2007; Shapiro, Kirkman & Courtney, 2007) To aid in mitigating the knowledge production problem, various forms of engaged scholarship are required and can range from attached insiders to detached outsiders (Bartunek, 2007; Evered & Louis, 1981;

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Lewin, 1951) to help connect the process and product of research (Kor &

Mahoney, 2000; Mahoney & Sanchez, 2004; Simon, 1978). Three types of

engaged scholarship suggested by Van De Ven (2007) are considered here: (1)

informed basic research; (2) collaborative research; and (3) design/evaluation

research.

Informed Basic Research

Informed basic research resembles a traditional form of social science where the

academic researcher adopts a detached outsider perspective of the social system

being examined, but solicits advice and feedback from key stakeholders and

informants (Gulati, 2007). Ouchi's (2003) research on making schools work

better, and Van de Ven's (2007) engaged scholarship model are exemplars of this

research approach.

Collaborative Research

Collaborative research entails the genuine sharing of power among researchers

and stakeholders (Amabile, *et al*. 2001). Collaborative research teams are

typically composed of insiders and outsiders who jointly share in activities in

order to co-produce basic knowledge that describes or explains a complex

problem (Bartunek & Louis, 1996; Louis & Bartunek, 1992; Mohrman, Gibson &

Mohrman, 2001).

Design/Policy Evaluation Research

A third form of engaged scholarship is the focus of the current chapter, in which

research is undertaken to examine questions dealing with the design and

evaluation of policies for solving practical problems (Denyer, Tranfield & Van

Aken, 2003; Simon, 1996), such as designing a better business school. This design/policy evaluation research goes beyond describing or explaining a social problem and seeks to obtain evidence-based knowledge of the efficacy or relative success of alternative solutions to applied problems (Romme, 2003; Romme & Endenburg, 2006; Van Aken, 2004, 2005). A pragmatic emphasis is placed on systems thinking and actionable knowledge (Morrell, 2008; Tranfield & Starkey, 1998; Whitley, 1984). Design/Policy Evaluation research differs from the Informed Basic and Collaboration research since it not only evaluates what has been done in the past, but also is forward thinking, using principles to imagine next steps for an improved design for solving problems, such as designing a better bridge.

The engaged scholarship model (Van de Ven, 2007) also resonates with Boyer's (1990) powerful articulation of four forms of scholarship: discovery, integration, application/practice, and teaching/dissemination. In Boyer's (1990) terms, the scholarship of discovery is the traditional research model, in which knowledge is sought for its own sake or for practical purposes through systematic modes of inquiry. The scholarship of integration is designed to synthesize extant research, bringing meaning to isolated findings, and developing new perspectives or connections across disciplines. The scholarship of application/practice is represented in the performance of service-related activities requiring specialized knowledge from one's discipline of expertise. The scholarship of teaching/dissemination comprises those creative activities that stimulate active learning and encourage students to be critical, creative thinkers. Thus, in Boyer's

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(1990) conception, scholarship comprises the distinct, yet overlapping functions of discovery, integration, application, and teaching. Much as EBMgt can play the role of connective tissue between the four stages of Van de Ven's (2007) model, it can also play a critical role in linking Boyer' (1990) four types of scholarship. The evidence that emerges from the scholarship of discovery activities today often languishes without explicit linkage to the other types of scholarship (Abbott, 2004; Ladd, 1987). When attempts are made to integrate such evidence, those attempts are often poorly structured, subjective, and unreliable. Systematic reviews, including meta-analyses, a central element of EBMgt (Rousseau, Manning & Denyer, 2008) provide a much more compelling way to approach the scholarship of integration. A relentless focus on the implications of research for specific management problems is critical (Bartunek & Rynes, 2010; McGahan, 2007). EBMgt also provides the glue for connecting the scholarship of discovery with the scholarship of application -- in the form of the decision aids that constitute another important element of EBMgt. Finally, directly leveraging empirical research findings into the MBA classroom provide one route to linking discovery with dissemination.

Our second argument is that the practice and culture of EBMgt will help mitigate barriers to learning and adaptive capacity, which hamper success in many complex organizations. Strategic decision making is rife with cognitive and organizational imperfections -- e.g., group-think (Janis, 1972) and organizational politics (Allison, 1971). While all of human behavior is subject to biases of various kinds, the phenomena studied in the "macro" fields are especially prone.

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March's (1999) characterization of three "elementary problems" that plague organizations in their pursuit of success is illustrative. The first problem is that of ignorance. Not only is the future uncertain, but peoples' anticipations of the future are also divergent. The past is also uncertain, because it is dimly, inaccurately, or differently recalled. Ignorance about the causal structure of the world expresses itself in *post hoc* socially-constructed explanations that shift often. The second problem is that of conflict. Multiple, nested actors interact over multiple, nested time periods on the basis of very different – often discordant - preferences that may themselves change over time. The third problem is that of ambiguity. The preferences of the actors may be ambiguous and only crudely measurable. In combination, uncertainty, conflict, and ambiguity serve to throw up extraordinary challenges in how organizations process "macro" issues, such as strategic choices, resource allocation and external dependence. Therefore, the pathologies associated with the bounded rationality (Simon, 1976) and human biases (Kahneman, Slovic & Tversky, 1978) endemic to all of management are likely to be exacerbated in the "macro" fields.

Given this, we propose that the need for EBMgt is also greater in Strategic Management. At a practical level, among the solutions offered by consulting organizations such as McKinsey to the problem of ambiguous strategic choices is "fact-based" decision making, with the implicit promise that expensive consultants will provide objective, fact-based decision guidelines that will lead to better strategic decisions. The consultants may very well be on to something here: evidence may be just the antidote. Indeed, that is just the argument that Pfeffer &

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Sutton (2006) make in their pioneering book on EBMgt. A commitment to fact-based decision making is at the core of their conception of EBMgt, and EBMgt is essentially a set of practices, systems, and cultural norms that make it possible to base decisions on sound facts rather than on casual benchmarking, superstitious learning, or untested ideologies. In this sense, the need for EBMgt is all the more pressing in the "macro" fields because of what is at stake. Such a practitioner-based approach to EBMgt is complementary to more science-based approach to EBMgt of informed, collaborative, and evaluative research designs just discussed.

Before the Strategy field can provide supportive EBMgt infrastructure for strategists, scholars may need to rethink how we do our research. We turn to this topic next.

Implications for EBMgt In Strategic Management

Building on the above observations, we make four specific recommendations:

- Devote research resources to understanding both the limitations of meta-analysis in our context and how to adapt it to the type of problems and research designs we work with;

- Learn more about (and/ or develop) synthesis approaches other than meta-analyses -- e.g., systematic ways to synthesize case studies and qualitative data;

- Engage in a clarifying conversation about levels of evidence in our field. How reliable are meta-analyses based on studies using non-experimental data?; and

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- Devote research resources to developing and testing decision
  supports (e.g., checklists) for Strategy problems.

Toward a More Sophisticated Understanding of Meta-Analysis

Perhaps the most immediate implication has to do with improving the use of
meta-analysis given the preponderance of observational data that is characteristic
of our field. While working on this chapter, we conducted a quick assessment of
the influence of the meta-analytic approach in Strategic Management by searching
for extant meta-analyses in the leading journals relevant to the field (see Table 1).
Although by no means an exhaustive list of all published meta-analyses in
Strategic Management, the results are instructive.

Overall, meta-analysis appears to be well represented in the field's top
journals. Over the 21-year period between 1989 and 2010, at least 17 studies
appeared in the top journals, covering core topics such as first-mover advantage,
generic competitive strategy, diversification, Mergers & Acquisitions, and
corporate governance. By comparison, Geyskens, Krishnan, Steenkamp & Cunha
(2009) identified 69 meta-analyses published in a broader set of 14 management
journals over the 1984-2007 period. Further, meta-analytic studies appear to be
well cited by scholars in Strategic Management, with citations for key studies
being in the mid- to high-hundreds. In certain core areas, such as the planning-
performance relationship and Mergers & Acquisitions, multiple meta-analyses
have been published in the top journals. Yet, given the inherent complexity of
Strategic Management phenomena and the relative youth of the field, it is not
surprising that few meta-analyses appear to provide a final, comprehensive

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answer to key questions (Dalton & Dalton, 2005). Rather, in many of the studies, the attempt is less to provide the last word in terms of quantitative effect size summaries and more to stimulate further theoretical development by identifying new moderators and directions for further inquiry. Paradoxically, this use of meta-analysis implies that it is difficult to list many well-established strategy findings as emerging from meta-analytic studies.

We conclude that the meta-analytic approach (Hunter & Schmidt, 1990) is well on its way to becoming an established element in the Strategic Management toolkit, but that significant roadblocks remain. As familiarity with the approach diffuses through the field, efforts are under way to improve meta-analytic practices, as in, for example, Geyskens et al.'s (2009) review and evaluation, which identifies a set of eight sequential decisions involved in meta-analysis (from choosing the effect size metric to dealing with publication bias) and proposes a set of best practices.

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The criticism of meta-analyses of observational data cited earlier (Egger, Schneider & Smith 1998) suggests a whole set of productive questions that "macro" scholars should ask. Are there indeed critical differences in the statistical properties of meta-analyses as applied to controlled trials as against to observational studies? Are there ways to account for possible selection bias and endogeneity effects when conducting meta-analyses of observational studies? Our

point here is not that meta-analyses are inappropriate but that we need to approach them with greater sophistication. The following comments from Egger, Schneider & Smith (1998: 142. 143) are instructive:

> Some observers suggest that meta-analysis of observational studies should be abandoned altogether. We disagree, but we think that the statistical combination of studies should not generally be a prominent component of reviews of observational studies. The thorough consideration of possible sources of heterogeneity between observational study results will provide more insights than the mechanistic calculation of an overall measure of effect, which will often be biased. The suggestion that formal meta-analysis of observational studies can be misleading and that insufficient attention is often given to heterogeneity does not mean that researchers should return to writing highly subjective narrative reviews. Many of the principles of systematic reviews remain: a study protocol should be written in advance, complete literature searches carried out, and studies selected and data extracted in a reproducible and objective fashion. This allows both differences and similarities of the results found in different settings to be inspected, hypotheses to be formulated, and the need for future studies, including randomized controlled trials, to be defined.

Thus, it may be wise to use caution in generating combined estimates of effect strength, taking due care to evaluate the appropriateness of doing so in light of possible sources of heterogeneity. In a broader sense, "macro" scholars intrigued by EBMgt should not only stay away from potentially misleading

combined estimates in meta-analyses and give more attention to the unique features of the input studies in their fields. One response to this imperative may be to develop ways to so syntheses are go beyond mechanistic meta-analyses.

Syntheses of Case Studies and Qualitative Data

Given that the unique features of "macro" data include not only observational data but also case studies and qualitative narratives, it may be appropriate for "macro" scholars to evaluate methods to synthesize such data. In nursing research, for example, there is a significant tradition of qualitative research, and Patterson, *et al.* (2001) have proposed an approach to integrating such data, labeled "meta-study." At its core, meta-study is an attempt to develop an analog to meta-analysis for the synthesis of qualitative data. Primary qualitative research is the beginning, and then there are three pathways that converge on meta-synthesis. Path 1 is the meta-data-analysis of research findings. Meta-data-analysis is processing the processed data (Zhao, 1991), and is not merely aggregative, but also interpretive (Noblit & Hare, 1988). Path 2 is meta-method for research methods. Meta-method focuses on the rigor and epistemological soundness of the research methods used in the under-pinning studies. Path 3 is meta-theory for theoretical and analytical frameworks. Meta-theory is the analysis of the underpinning structures on which the source research is grounded: philosophical, cognitive, theoretical perspectives and assumptions.

Similarly, in public administration, Jensen and Rodgers (2001) proposed a meta-analytic approach to the integration of case study data, and identify two types of prior integrative effort based on case studies: patchwork case studies and

comparative studies of cases. Patchwork studies integrate several prior case studies that have examined a given entity at various points in time into a composite summary (e.g., Roethlisberger & Dickson's (1939) summary of the Hawthorne studies). In contrast, a comparative study of cases typically seeks to integrate examinations of different entities in order to identify underpinning commonalities (e.g., Allison 1971). Central to Jensen and Rodger's (2001) meta-analysis model for case studies is the insight that structured reporting of case study particulars facilitates the accumulation of case study evidence, leading to their recommendation that universal standards be adopted for the reporting of case studies -- quantitative and qualitative.

Closely related to the task of synthesis approaches for case study and qualitative data is the challenge of learning how to perform integrative, interpretive and explanatory research syntheses (Rousseau, Manning & Denyer, 2008). Aggregative syntheses of quantitative studies (i.e., meta-analyses) are not the only legitimate synthesis even in the current EBMgt toolkit. The goal of integration in research synthesis refers to the attempt to answer specific questions by combining across different methods. Triangulation across multiple studies and methods, relying on reviewer judgment, is central (Denzin, 1978; Van de Ven, 2007). The goal of interpretation in research synthesis refers to the attempt to build higher-order theoretical constructs by combining and interpreting extant research. The data are primarily descriptive, and seek to incorporate the interpretations of the primary researchers. The goal of explanation in research synthesis refers to the attempt to generate new theory by creating explanations

and discerning patterns behind extant claims of explanation. Rousseau, Manning and Denyer's (2008) discussion makes it clear that these approaches to research synthesis are valid members of the EBMgt team, although aggregative statistical meta-analysis may be the best known.

Engaging in a Conversation about Levels of Evidence in Strategy

Fields, such as medicine, in which evidence-based approaches have gained traction, appear to have achieved some measure of consensus about the relative value accorded to different types of evidence. For example, the Center for evidence-based medicine at Oxford University provides five different levels of evidence, with systematic reviews of randomized controlled trials at the highest level (i.e., the best evidence) and expert opinions, and reasoning based on first principles at the lowest level. While there will no doubt be some differences of opinion among medical scientists and practitioners as to the nuances of such a hierarchy of evidence, its broad features provide some commonality to the field. We propose that the "macro" fields should engage in an explicit conversation about what a corresponding evidence hierarchy would be for our field. Such a conversation should cover the following questions, among others. What types of evidence do we give attention to? Case studies, process descriptions, large-sample quantitative analyses based predominantly on archival data, practitioner war stories, and so on, would surely surface. If these types of evidence were to conflict with each other in addressing a particular evidence, under what conditions would we believe one type versus the other? Which of those types are most EBMgt-friendly? Quantitative analyses, it would appear although with the afore-

mentioned limitations of observational data. What should we do with the evidence-types that are not EBMgt-friendly, such as unique events and evidence that relies exclusively on non-experimental data? Perhaps we would figure out other ways to discipline our conversations about them.

Developing and Testing Decision Supports for Strategists

One of the central features of evidence-based approaches identified by Rousseau and McCarthy (2007) is the availability (or not) of decision supports. Decision supports are pragmatic tools designed to serve as scaffolding for practitioners to make decisions that are informed by current best evidence (e.g., checklists). Medicine is characterized as having "numerous" decision supports, (Rousseau & McCarthy, 2007) such as patient care protocols, handbooks of drug interactions, online decision trees, etc. In contrast, business disciplines have few decision supports available to students and practitioners. Where concrete decision supports exist, they are not in the public domain -- e.g., companies may capture their internal learning in decision support tools, but those are treated as intellectual property and guarded zealously. One area in which "macro" scholars can begin to incorporate EBMgt thinking is to develop decision supports that are based on research findings. Such decision supports may be as simple as checklists (Gawande, 2010) that encapsulate the steps to follow in making a decision, or the criteria to be employed in evaluating an outcome. Such checklists may, in turn, give rise to further research opportunities, such as empirically evaluating whether their use helps to improve performance.

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Conclusion

In brief, we have proposed that EBMgt faces some unique challenges on the "macro" side of the aisle. An inherent bent toward complex, multi-level and unique problems present a philosophical challenge and the preponderance of observational studies present a methodological challenge. Yet, there are compelling reasons why "macro" scholars need to take EBMgt seriously. On the one hand, EBMgt will nurture the establishment of a new model of research that is not only cumulative in its knowledge-building but also promotes engaged scholarship that reduces the unfortunate opposition between rigor and relevance. On the other hand, the uncertainty, conflict and ambiguity that characterize "macro" decision contexts also exacerbate the organizational pathologies that are present across the sub-fields of management and heighten the need for EBMgt as a countermeasure. Based on the above reasoning, we have put forward a set of recommendations to help scholars advance the EBMgt agenda in Strategy and Organizational Theory.

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