II. Research

Organizational Behavior’s Contributions to Evidence-Based Management

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Abstract

Organizational Behavior (OB) is a social science that has discovered general principles regarding the organizing and managing of work. One of management research’s more mature fields, OB’s contribution to Evidence-based Management (EBMgt) stems from its large body of programmatic, cumulative research. This chapter provides an overview of OB research, including its history, standards for evidence and domains of study. It distinguishes between science- and practice-oriented OB research and their respective evidence criteria to better show different ways OB research can inform EBMgt. OB research has identified several hundred evidence-based principles to inform practice, and this chapter provides examples. The chapter concludes by discussing how OB scholars, educators and practitioners can further EBMgt practice.

Keywords: Organizational Behavior Principles Science-oriented evidence criteria Practice-oriented evidence criteria Hiring talent Goal setting Making decisions Motivating people
Organizational Behavior’s Contribution to Evidence-Based Management

This chapter provides an overview of the background and focus of the Organizational Behavior (OB) field and its findings. It uses examples of well-established findings to demonstrate the sort of actionable principles OB contributes to guide evidence-informed practice. It then assesses the state of OB practice and education. The chapter concludes with implications for how practitioners, educators and researchers can further the development and use of OB knowledge in Evidence-based Management (EBMgt).

Organizational Behavior has been a mainstay in professional management education for decades. The field’s goals are to understand human behavior in organizations and provide knowledge useful to practitioners. These two goals often coincide. Here’s an example from one manager’s experience: Jim Fuchs, a mid-level manager in an American firm, came up to me after a session on change management in my business school’s executive program. “Let me show what I do when I see a need to convince the supervisors reporting to me we need to change something about how we manage our people,” he said, going over to one of the classroom’s flip charts. “I learned Porter and Lawler’s model of motivation back while I was an undergraduate [business major],” he said as he sketched out a diagram (Figure 1). “First, to get people to put out effort in new ways, they have to see that a certain kind of new behavior is more likely to bring them rewards [effort-reward probability] they care about [value of reward]. Then they need to put out the right kind of effort to produce the performance we need [effort→performance accomplishment], which means they need to know what
new thing they’re supposed to be doing [role perceptions] and have the ability to do it [abilities and traits]. If you put the right rewards, skills and expectations in place, you get the right results and your employees stay motivated.” I commented that this might be one of the best examples of how an undergraduate OB course can be useful. Jim laughed and said, “At this point, my supervisors know this model by heart.”

This classic evidence-based motivation model, as Lyman Porter and Edward Lawler (1971) formally presented it, actually is a bit more detailed (Figure 2) than Jim’s diagram -- consistent with the large body and diverse body of evidence on which it is based. Yet Jim’s adaptation of it has the essentials. Importantly, Jim drew upon this scientifically developed framework in his day-to-day management practice, applying it wherever he judged it to be useful. And by using this model regularly, his staff learned how to think more systematically about why employees do what they do on the job and how to motivate them to do more and do better. Jim Fuchs’ approach fulfills an important objective of science: to think clearly about the social and physical world and make informed interventions in it. It also exemplifies a simple but adaptable way in which OB research (and well-supported theory) can contribute to EBMgt.

At this writing, Organizational Behavior is arguably one of the more developed bodies of scientific knowledge relevant to management practice. Like the broader field of managerial and organizational research of which it is a part, OB is a social science. MBA and undergraduate business programs incorporate a good deal of the field’s evidence into courses on decision making, leadership and
teams (Chartiers, Brown & Rynes, 2011). Along with other research-oriented fields such as marketing and advertising (Armstrong, 2011), OB offers a substantial research base to inform management education and practice. Some OB findings are already distilled into useable form (e.g., Locke, 2009) for management education, professional and personal development and problem solving. At the same time, making it easier for practitioners to know about and use the OB evidence base continues to be a work in progress.

A Century of Research

Research on fundamental processes in organizing and managing work began with the activities of OB’s parent disciplines, industrial-organizational psychology (known as work and organization psychology in Europe; Munsterberg, 1913; Gilbreth, 1918), industrial sociology (Miller & Form, 1950), public administration (Follett, 1918; Gulick & Urwick, 1937; Simon, 1997) and general management (Drucker, 1974; McGregor, 1960). Early empirical work focused on employee selection, testing, vocational choice, and performance (Munsterberg, 1913); group dynamics, supervisory relations and incentives (e.g., Hawthorne studies, Roethlisberger & Dickson, 1939); worker attitudes (Likert, 1932; Kornhauser, 1922); and leadership, authority and control (Selznick, 1947; Braverman, 1974).

The formal label “organizational behavior” emerged in the 1960s and 1970s, as business schools responded to criticism that what they were teaching was more opinion and armchair theorizing than validated knowledge (Gordon & Howell, 1959). Schools began hiring social scientists to promote the use of research to understand and solve organizational problems and provide more
science-based business education (Porter & McKibben, 1988). OB departments sprang up where once stood more eclectic “management” or “personnel” units.

Today’s OB researchers come from many fields. Some identify OB as their home discipline, typically completing doctorates in business schools. Others originate in and often continue to identify with psychology, sociology, human development or economics. All of these researchers share an interest in how humans behave in organizations. As just one example of the cross-pollination between behavioral science and business disciplines prevalent in OB, the author of this chapter is an OB professor with a doctorate in industrial-organizational (I-O) psychology who has taught in both psychology departments and schools of business and public-sector management.

Today, OB research is prevalent worldwide, with thousands of researchers currently at work expanding the OB knowledge base. The largest professional association focused on management research is the Academy of Management. In 2011, this academy had over 19,000 members. Its OB division had nearly 4,000 active academic members and more than 400 executive/practitioner members, while the Human Resources division, whose research (and some of its members) overlap OB, had almost 2,500 academic members and 300 executive/practitioner members. Other professional associations outside the United States also have members actively adding to the OB knowledge base.

Forces at multiple levels drive how humans behave in organizations. OB research investigates individual and group behavior along with formal and
informal organization-wide dynamics. The types of phenomena that intersect the OB field range from the oil rig worker trying to decide whether to report hazardous job conditions to the conflict-ridden top management team whose infighting undermines how the company’s front-line managers perform. As a multi-level field, OB scholarship rides the organizational elevator from individual personality, beliefs and behavior to group dynamics to organizational- and industry-level practices that affect how people act and respond in organizations.

The largest body of OB research addresses individual and group behaviors and their ultimate causal connections with organizational performance and member well being. This wide array of studies on individuals and groups is the reason academics sometimes refer to OB scholars and their research as “micro” (as opposed to more “macro” areas of Organizational Theory or Strategic Management, see Madhavan & Mahoney, this volume), as in “she’s a micro person.” However, the term micro is not a particularly accurate description for the OB field (Rousseau, 2011). A good deal of OB research examines such organization-level phenomena as culture or change implementation (e.g., Schein, 2010), but the micro/macro distinction remains common in academic OB-speak.

**OB Research Philosophy and Objectives**

The research philosophy underlying OB is largely in-line with evidence-based management (Briner *et al.*, 2010; Rousseau, this volume), with its aspiration to improve organization-based decision making and tackle applied problems in ways that balances economic interests with the well-being of workers (Munsterberg, 1913; Viteles, 1932; Katz & Kahn, 1966).
Historically, OB research has been responsive to business trends and practice concerns. Over time, its emphasis has shifted -- from productivity to global competitiveness and quality; from employee security to employability (see Rousseau, 1997, for an assessment of trends from 1970s to 1990s). Indeed, critics inside and outside the field have long argued that it tends to emphasize managerial and performance-related concerns over the concerns of workers and other stakeholders (Baratz, 1965; Ghoshal, 2005) -- an appraisal echoed by Hornung (this volume) and other critical theorists.

On the other hand, OB research addressed the worker experience on the job even prior to the famous Hawthorne studies at Western Electric (Roethlisberger & Dickson, 1939) or the popularity of work satisfaction questionnaires (originally developed for Kimberly Clark by Kornhauser and Sharp (1932; Zicker, 2002). Since then a good deal of research concentrates on the effects of work and organizations on the well being of workers, families, clients and the general public (e.g., Gardell, 1977; Karasek, 2004, Kossek & Lambert, 2005). More recently, the “Positive Organizational Behavior” movement has expanded both the goals of organizational research and the outcomes it studies to include how workers can thrive in organizational settings (Dutton & Ragins, 2006). The large and growing body of OB research is wide-ranging in its economic and social implications.

**Focus on Cumulative Findings**

My sense is that supporting EBMgt comes relatively naturally to many OB scholars and educators. As Chartier and colleagues (2011) report, OB educators
typically rely on evidence more than do faculty in such fields they surveyed such as international business or strategy. Part of this reliance is attributable to the cumulative findings in certain core OB research areas. The field’s history and tendency toward sustained interest in particular topics makes possible the cumulative research that is generally valued in the evidence-based practice movement (Barends, et al., this volume). OB’s accumulated findings contrast with newer management research fields such as strategy and organizational theory (Madhavan & Mahoney, this volume) where less attention has yet been paid to creating integrative knowledge (cf. Whitley, 1984; 2000). As such, OB scholars have over time pulled together and built upon the available evidence on an array of management issues. The result provides evidence-informed practitioners and educators with numerous well-supported principles of human behavior, organizing and managing with considerable practical value (e.g., Locke, 2009). I present examples of these principles below, after discussing a key reason why cumulative findings in OB research can produce these principles; that is, the largely agreed-upon norms for what constitutes evidence in the OB field.

Criteria for Evidence

Generally speaking, the OB field has certain widely held norms regarding what constitutes sufficient evidence to make claims regarding the truth of a research finding. Norms are particularly well articulated for what I refer to here as OB’s “science-oriented evidence.” These norms, exemplified by the seminal work of Cook and Campbell (1979), emphasize the value of (1) controlled observations to rule out bias and (2) consistency with the real world to promote the
generalizability of findings. Classic academic or scholarly research is motivated to understand the world (i.e., to develop and test theory). Less widely discussed or, perhaps, agreed upon, are norms or standards for OB’s “practice-oriented evidence.” Practice-oriented research investigates what practitioners actually do in organizations. In particular, a practice orientation demonstrates what happens when scientific evidence is acted upon in real-world settings. The goals of science- and practice-oriented research differ. Thus, each emphasizes somewhat different indicators of evidence quality.

Note that the same study can have both science and practice goals. For example, employee participation systems have been investigated to test scientific theories of voice and motivation as well as such systems’ practical impacts on productivity and their sustainability over time (e.g., the Rushton project, Goodman, 1979). Equitable pay practices have been examined to evaluate equity and justice theories and impact on employee theft (Greenberg, 1990). Job enrichment interventions have tested both theory regarding optimal levels of job autonomy and impact on the quality of wastewater treatment (Cordery, et al., 2010). Such studies are proof that science and practice goals can go hand-in-hand.

**Criteria for Science-Oriented OB Evidence**

The general goal of science-oriented research is to interpret and understand. OB research pursues this goal by relying largely on a *body of studies*, rather than the results of any single study, in evaluating a particular finding’s validity. Because all studies are limited in some fashion, no single study is sufficient to establish a scientific fact. Good evidence constitutes a “study of studies,” where individual or
primary studies are considered together in order to allow the credibility of their overall findings to be assessed (Briner & Denyer, this volume; Rousseau, Manning & Denyer, 2009). Systematically interpreting all relevant studies is the general standard for determining the merit of any claims regarding evidence (Hunter & Schmidt, 1990). (N.B. Practitioners are more likely to use rapid reviews, that is, quick searches through a few studies to see if agreed-upon findings exist, and other expedient assessments of published evidence when no systematic review is available.) The most common form of systematic review in OB is the meta-analysis, a quantitative analysis of multiple studies to determine the overall strength or consistency of an observed effect (e.g. job satisfaction’s effect on performance). It is not unusual for OB meta-analyses to review hundreds of studies, combining results for 30,000+ individuals -- as in the case of the impact of general mental ability on occupational attainment and job performance (Schmidt & Hunter, 2004). OB’s roots in psychology have shaped its research methods and aligned its culture of evidence largely with that of psychology, where use of meta-analysis is common. Say, for example, that 90 studies exist on the relationship of flexible work hours with staff retention and performance. Meta-analysis standards typically mandate examination of all 90 studies -- whether published or not -- to see what findings, if any, the studies together support and to examine the nature of any inconsistencies across the studies.

There is a world of difference between a systematic review of a body of studies (e.g., a meta-analysis) and a more casual or “unsystematic” literature review. A systematic review has a methods section that details how the review
was conducted and what specific technical requirements were used (Briner & Denyer, this volume). In contrast, conventional literature reviews are highly vulnerable to the biases authors display in their choice of studies to include. Studies included in conventional literature reviews reflect the author’s priorities and focus and thus may not represent the body of research. In conducting a systematic review of science-oriented studies, the following indicators of evidence quality are evaluated.

1. **Construct validity: Is the purported phenomenon real?** A basic requirement of evidence is construct validity, which asks whether the underlying notion or concept jibe with the observed facts. In the case of flexible hours, is there a set of common practices companies pursuing flexible hours actually use? Or do many different kinds of practices go by the label “flexible hours”? Do we have reason to treat the “flexible hours” of a 4/40 workweek as the same as the flexibility workers exercise over their own daily stop-and-start times? If research findings reveal that 4/40 work weeks and personal control over work hours have different consequences for workers and employers, we are likely to conclude that “flexibility” in reality takes several distinct forms. As in the case of flexibility’s potential effects on worker motivation or company performance, any test of cause-effect relationship needs to first establish a clear meaning and construct validity for the concept of interest. In the case of flexibility, concepts of flexibility with clearer construct validity are “reduced hours” -- where the hours worked are fewer than the normal work week -- and “working time control” --
where workers exercise personal control over when they work (not how many hours *per se*).

As illustrated above, the term “flexible hours” can have so many different meanings that it is not a single coherent construct. Similar issues exist for popular notions like “morale” or “emotional intelligence,” phrases used colloquially to refer to a variety of things. Morale can mean group *esprit de corps* or individual satisfaction, each driven by very different forces in organizations. Similarly, emotional intelligence (EI) is used to refer to an emotional competency (Goleman, 1995) or a form of intelligence in social relations distinct from general intelligence (Mayer, Salovey & Caruso, 2000). Further, some object to equating emotion and reason, arguing that EI cannot be a form of intelligence (Locke, 2005). As with the flexibility example above, the key is to develop a clear definition of the construct being studied, so the study’s findings can best be interpreted and used by others.

Because scholars tend to be concerned with construct clarity (terminology, definition and distinctions), practitioners looking into the OB literature to answer a practice question usually need to try a variety of key words, or seek out an academic for guidance, in order to identify the proper scientific terms (which may include some “jargon” specific to the field) the relevant research uses (Werner, this volume).

2. *Internal validity: Do the observed effects or relationships indicate causality?* Internal validity is the degree to which a study’s results are free of bias (Cook & Campbell, 1979). If bias cannot be ruled out, then any relationship we
observe, such as a correlation between rewards and performance, may be due to measurement error, methodological problems or some uncontrolled third variable like the state of the economy. It’s unlikely any single study will be bias-free. In contrast, several studies with different settings, methods, etc., can cancel out potential biases. Internal validity is established when a body of studies show comparable findings across different research designs, such as experiments and longitudinal studies. As we are able to use these comparable findings to rule out the potential effects from measurement error, methodological problems and other alternative explanations, it is more likely that the observed effect is real and caused by the particular factor(s) investigated.

3. **External validity: How widespread is the effect? Why does it hold sometimes and not others?** External validity (sometimes called generalizability) refers to the extent to which a result holds across populations, settings, procedures and time periods (Cook & Campbell, 1979). A study might provide information regarding the conditions under which a phenomenon is likely to be observed or repeated elsewhere. Attention to the circumstances surrounding the finding helps us understand its generalizability and provides information regarding *why* a finding might apply in some circumstances and not others. Relevant details can tell us if there are conditions, not part of the phenomenon itself, which influence its occurrence or consequences. Such is the case where the effects of rewards on performance depend on the way rewards are distributed (to all employees vs. only high performers vs. various employees, but unsystematically, Lawler, 1971; 1990) or the extent to which the effects of high-involvement work systems depend upon
appropriate workforce training and rewards (cf. MacDuffie, 1995). Another way context impacts generalizability is by changing the meanings people give to the event, behavior, practice or phenomenon studied. Prior events or historical factors, such as a previously failed change, can lead an otherwise promising practice to fail because people view the new practice through the lens of that previous failure. Or, society itself can give the phenomenon a distinct meaning: How people experience “close supervision” in the relatively authoritarian culture of Turkey is likely to differ from egalitarian Norway (House, et al., 2004). The same set of directive behaviors from a boss might appropriately coordinate work in one culture but controlling micro-management in the other.

Criteria for Practice-Oriented OB Evidence
The goals of practice-oriented research are to identify what works (or doesn’t) in real-life settings and learn which circumstances affect how those practices work. Both scholars and practitioners conduct practice-oriented research. Scholars seek to obtain information on how practitioners approach the decisions they make and the actions they take. Practitioners conduct their own research, often in the form of pilot tests or evaluation studies, to gauge the impact of a company policy or program. Practice-oriented research is directed toward particular problems and settings practitioners care about. Design science’s collaborations among academics, end users and an organization’s technical experts are a form of practice-oriented research (Van Aken & Romme, this volume). Key criteria for practice-oriented evidence are discussed below.
1. **Detailed analysis: What are the conditions of practice?** Practice-oriented evidence is useful in part because it describes what practitioners actually do and the conditions under which they do it. Data can be gathered in many ways: via interviews, observations and surveys, in forms both qualitative and quantitative. Perlow’s (1999) study of how a company implemented its flexibility policy used interviews and observations. This study uncovered how employees received mixed signals regarding the acceptability of flexibility and the role that position and status in the company played in determining whose requests for flexibility were granted.

Another example of practice-oriented research is investigations of how practitioners actually use an evidence-based process. Pritchard, Harrell, DiazGranadeos & Guzman (2008) investigated why differences existed in the results of an organizational analysis and assessment system known as PROMES. Their investigation revealed the kinds of implementation behaviors that affected PROMES’s outcomes. The extent to which PROMES implementers adhered to the system’s specified procedures affected their overall productivity gains, as did the quality of the information they provided the organization.

Given the widespread variation in how organizations implement routines (e.g., performance appraisals) or interventions (e.g., quality programs) there is a lot of value in practitioner-oriented studies that examine how sensitive the expected outcomes are to whether practitioners adhere to specified procedures. In medical research, for example, practice-oriented research indicates that diabetics who adjust or fine-tune their regimen for self-testing and administering insulin
enjoy better health outcomes than those strictly following their clinicians’ orders (e.g., Campbell & colleagues, 2003). Despite this example, non-compliance with standard procedures can be associated with poorer outcomes as in the case of PROMES above. Practice-oriented research provides crucial information regarding the sensitivity of interventions and practices to variability in compliance.

The variability in adherence to prescribed processes and procedures is referred to as *implementation compliance*. Implementation compliance is a major issue in implementing evidence-based practices. In the case of PROMES, consultants and managers who implemented the technique but did not fully follow its standard instructions oversaw programs with fewer performance gains than did those who adhered more closely to the specified PROMES procedures. Companies that follow fads have been known to “implement the label” but not the actual practices on which the evidence is based. So-called engagement or talent management programs, for example, might really be the same old training and development activities the company has always followed, with a catchy new name. Attention to the actual activities implemented is critical understanding what works, what doesn’t and why.

2. *Real-world applicability: Are the outcome variables relevant to practice?*

Practice-oriented research focuses on end points that are important to managers, customers, employees and their organizations. In recent years, research/practice gaps in healthcare have been reduced by more patient-oriented research, tapping the patient outcomes that clinicians and their patients care about, such as
morbidity, mortality, symptom reduction and quality of life. This focus on practice-oriented outcomes in medicine contrasts with the theory-centric outcomes of science- (or disease-) oriented medical research. In the latter, outcomes typically take the form of specific physiological indicators (e.g., left ventricular end-diastolic volume or the percentage of coronary artery stenosis, Ebell et al., 1999). Similarly, practice-oriented OB evidence includes outcomes of practical significance such as the level of savings or improved employee retention, data often available from an organization’s own records. In contrast, theory-centric outcomes in OB research might include interpersonal organizational citizenship behavior or employee role-based self-efficacy, typically using indicators academics have developed.

As part of his executive master’s thesis, banker Tom Weber took up the challenge of testing whether a leadership training program for the bank’s managers would actually change their behavior and the bank’s performance. In contrast to the typical large sample sizes of academic research, this study relied on numbers more typical of the bank’s actual training programs. Using a sample of 20 managers, nine were randomly assigned to the training group and the remainder to the control group, which received no training. To provide the kind of support training often requires in a busy work setting, leadership development (“the treatment”) consisted of a one-day group session followed by four individual monthly booster sessions. Results demonstrated that subordinates of the trained managers reported increases in their managers’ charisma, intellectual stimulation and consideration than did subordinates of control-group managers.
Using archival data from his bank’s branches, Weber found that the training led to increased personal loan and credit card sales in the branches supervised by the trained managers. These outcomes were selected for their real-world relevance, rather than theoretical interest (cf. Verschuren, 2009). This study, undertaken because a practicing manager questioned the practical value of transformational leadership training, ultimately was published in a major research journal (Barling, Weber & Kelloway, 1996).

3. Effect size: How strong is the effect or relationship? The effect size is a measure of the strength of the relationship observed between two variables (Hedges & Okin, 1985). It is a statistical criterion useful to practitioners and academics. Academic researchers rely on effect sizes to interpret experimental results. For example, where two or more treatment conditions are manipulated, effect sizes can tell which treatment is more powerful. Effect sizes are also central to meta-analyses and allow comparison of the relative effects of several factors (e.g., whether personality or intelligence is more important to worker performance).

From a practice perspective, a large effect size for the relationship between mental ability and job performance means that increasing the general intelligence of the workforce can have substantial impact on worker contributions to the firm. Small effect sizes can mean that practitioners looking for an intervention that improves outcomes ought to look elsewhere. Such is the case in a study of software engineering, where a collection of technologies used in actual projects had only a 30 percent impact on reliability and no effect on
productivity (Card, McGarry & Page, 1987). Instead, human and organizational factors have been found to have stronger effects on software productivity than tools and methods (Curtis, Crasner & Iscoe, 1988).

In the context of practice, effect sizes are often most useful when judged in relation to costs. Even a small effect can be important in practice. If it can be gained at minimal cost, it may be worth the slight effort required. For example, it is relatively easy to create a general sense of group identity (where coworkers in a department view themselves as an in-group, distinct from others). Group identity is positively related to willingness to help peers (and negatively related to helping outsiders.). Its benefits (and costs) are relatively easy to induce, one reason why logos and group nicknames are so popular (Gaertner & Dovidio, 2000). Systematic research reviews can be very useful to practice when they provide both effect sizes and cost/benefit information. Now we turn the kinds of well-established findings OB research produces.

**Some Well-Established OB Findings**

The primary knowledge products of OB research are *principles*, that is, general truths about the way the world works. Massive amounts of data have been accumulated and integrated to develop these principles, each of which sums up a regularity manifest in organizations and on the part of their members. For purposes of this chapter, a few well-established OB principles are summarized to illustrate OB’s relevance to the practice of EBMgt. (Additional evidence-based OB principles are summarized in Cialdini, 2009; Locke, 2009; and Latham, 2009.)
Readers will note that these principles take one of two forms. The majority are forms of declarative knowledge ("what is") -- facts or truth claims of a general nature, such as the goal-setting principle, “Specific goals tend to be associated with higher performance than general goals” (Latham, 2009). Less often, these principles represent procedural knowledge ("how to") -- these are task behaviors or applications found to be effective in acting upon the general principle or fact. As an example, take the finding, “The goal and the measure of performance effectiveness used should be aligned,” as in the case where a goal of 15 percent increase in logger productivity is measured as the number of trees cut down divided by the hours it takes to cut down those trees (Latham, 2009, p.162). By its very nature, declarative knowledge tends to be general and applicable to lots of different circumstances. Specific goals can take many forms across countless work settings. In contrast, procedural knowledge is more situation-specific and may need to be adapted as circumstances change (Anderson, 2010). In some situations, no single goal may be adequate to reflect productivity, and thus more than one measure of performance effectiveness may need to be used.

Making Decisions

Decision making is a fundamental process in organizations. Making decisions is the core activity managers perform. A prominent principle in management education is bounded rationality: *Human decision makers are limited in the amount of information they can pay attention to at one time and in their capacity to think about and process information fully* (Simon, 1947; 1997). Indeed, such are the limits of individual decision-making capabilities that *having too much*
choice tends to keep people from making any decision at all (Schwartz, 2004, pp. 19-20). Schwartz’s research demonstrated that giving shoppers at an upscale grocery only six choices (in this case, of jam) increased the likelihood that they would choose to buy some, in contrast to giving them 24 choices. This principle derives from research demonstrating that people can only process a limited amount of information at a time (i.e., the “7 plus or minus 2” rule, related to working memory, Miller, 1956). In the case of Schwartz’s study of customer choices, these findings also have practical utility in terms of both boosting sales and making the best use of shelf space.

The pervasive effects of bounded rationality make it necessary for EBMgt practices to be structured in a fashion that is compatible with our cognitive limits as human beings. To aid more systematic and informed decisions, another evidence-based principle of a procedural nature applies, that is: Develop and use a few standard but adaptable procedures or tools to improve the success of organizational decisions (Larrick, 2009). Decision supports are pragmatic tools that can be designed to aid practitioners in making evidence-informed decisions. A checklist, for example, might use Yates’10 Cardinal Rules (Yates, 2005; Yates & Potwoworski, this volume) as steps to follow in making a good decision. Evidence-informed decision-making procedures need to be simple to use, because complexity or perceived difficulty can keep people from using them. Contemporary medical practice has numerous decision supports (Gatwande, 2010) such as patient care protocols, handbooks on drug interactions, online decision trees and specific tests indicating whether a course of treatment applies.
In contrast, business practices in OB’s domain appear to make limited use of decision supports (e.g., hiring, giving feedback, running meetings, dealing with performance problems, etc.).

**Hiring Talent**

In the long history of selection research (e.g., Munsterberg, 1913), perhaps the most prominent principle is that *unstructured interviews are poor predictors of job performance*. Interviewers using their own idiosyncratic questions have low inter-interviewer agreement on applicants and virtually no reliable capacity to identify the candidate who is best able to do a job. Recruiters and personnel interviewers, and the people who manage them, are known to be quite limited in the information they gather (Highhouse, 2008). In addition, because they typically lack quality feedback on their success rates in identifying good employees, interviewers are unaware of their own poor performance in hiring talent. On the other hand, *structured interviews using well-designed job-related questions can be good predictors of job performance* (Stevens, 2009). This second principle in evidence-based selection provides a basis for improving the way personnel decisions are made, by developing specific interview questions directly tied to job content and success on the job.

Other evidence-based principles for hiring talent reflect the kind of individual qualities known to widely predict future job success. A third principle is that *general mental ability is the single best predictor of individual productivity* and other job performance indicators. It is thus the case that for skilled jobs, top workers can produce 15 times as much as the poorest performers (Schmidt, 2010).
A fourth principle is that hiring **people who are conscientious and emotionally stable** is **typically a better decision than hiring agreeable people who try to get along with others** (Barrick & Mount, 2009). Employers spend a lot of time screening potential recruits for interpersonal fit. Yet the fact is that getting along with others tends to be far less valuable for performance than having sufficient self-discipline to work in a thoughtful manner (conscientiousness) and being free of anxiety and neuroticism (emotional stability).

**Motivating People**

Motivating employees is a critical managerial concern. A central factor in individual and group performance is the existence and acceptance of challenging performance goals (Locke & Latham, 1990). The likelihood that **setting specific, challenging goals improves performance** is as high as .90 (Latham, 2009). Moreover, **accurate feedback generally increases both performance and learning**. Feedback effects are nuanced (Kluger & DeNisi, 1996): Performance is increased when the feedback focuses on providing task-related information rather than self-referencing information. Thus, the subordinate receiving feedback highlighting the goals she attained and those on which she fell short tends to demonstrate performance improvement while another subordinate who is told that her personality is great with customers but annoys her colleagues probably will not. Similarly, **performance feedback aids learning when given intermittently rather than constantly**, to allow learners to reflect on their learning (see Goodman & O’Brien, this volume).
Another body of research indicates that money does motivate people under certain conditions; in particular, pay for performance can increase the particular type of performance targeted if money is important to the performer (Rynes, Gerhart & Parks, 2005). However, the effects of individual-level pay for performance are limited. Incentive pay increases individual performance in tasks that are not cognitively challenging (Ariely et al., 2009) Similarly, pay for individual performance doesn’t work very well when employees have a lot to learn before performing at a desired level (Durham & Bartol, 2009) or when employees are highly interdependent (Shaw, Gupta & Delery, 2002).

There are other motivation outcomes, such as commitment and job satisfaction. Offering rewards that create a compelling future, such as development opportunities, engender greater commitment to the organization than short-term rewards (Hornung, Rousseau & Glaser, 2009; Rousseau, Hornung & Kim, 2010). Job satisfaction is an important predictor of life satisfaction in general -- and mental challenge is a key cause of job satisfaction (Judge & Klinger, 2009). The optimal level of challenge to promote job satisfaction depends on the individual’s mental ability and skills (what’s known as an inverted-U shaped distribution).

How managers behave affects their capacity to direct the attention and behavior of others. One well-established principle is managers need to cultivate power or influence beyond the authority that comes with their position (Yukl, 2009). Gaining the respect of subordinates, coworkers and superiors gives managers an important source of influence. Top managers who set a vision for
their organization typically outperform executives who don’t (Kirkpatrick, 2009). Such managers develop and reinforce values and norms that affect how employees behave.

**Additional Research Findings**

These well-established findings from a small set of OB’s many research areas have broad practical use. Additional findings are found in Edwin Locke’s compendium detailing 33 sets of practitioner-oriented findings, *Handbook of principles of Organizational Behavior: Indispensable knowledge for evidence-based management* and Gary Latham’s guide to *Becoming the evidence-based manager: Making the science of management work for you*. Jone Pearce’s textbook (2009) *Organizational Behavior: Real evidence for real managers* provides other generalizable OB principles (see Pearce, this volume, for a discussion of the role of textbooks in EBMgt).

**Current Use of OB Findings in Practice**

Given the facts that OB research offers regarding making decisions, hiring talent and motivating people, is there any evidence that practitioners actually use this knowledge? No definitive indicators exist to assess the extent to which educated managers use OB’s knowledge base. Without actual data on evidence use, I looked for other practice-related indicators likely to occur with use of OB evidence. First, I surmise that OB evidence use is more likely where practitioners hold beliefs consistent with the OB findings regarding management practices. Second, I surmise that practitioners who conduct OB-related research themselves are more likely to apply such evidence in their own professional decisions. Thus,
this chapter presents two kinds of information to assess the likelihood that practitioners make use of OB research: whether practitioners are aware of relevant OB findings and whether they undertake or participate in practice-oriented OB research themselves.

Practitioner Awareness of OB Findings

Of all the conditions needed to motivate practitioners to use evidence-based practices, perhaps the most basic is awareness of research findings (see Speicher & Adams, this volume, for other conditions). To examine the extent of practitioner knowledge of OB findings, Rynes, Colbert and Brown (2002) developed a quiz regarding 35 well-established findings in OB related to the effectiveness of various company practices. (These findings were selected because management professors think them to be important.) Nearly 960 mid-level managers and senior executives who were members of the Society for Human Resource Management (SHRM) took the quiz. They averaged 13 years of experience in management or HR.

Results revealed wide gaps between replicated OB research findings and practitioner beliefs. The greatest gaps involved research findings about hiring talent. For example, the item, “Companies that screen job applicants for values have higher performance than those that screen for intelligence,” is false. Only 16% of practitioner respondents got it right. In emphasizing values over ability, respondents may actually be reflecting the preference for informal methods to size up job applicants and make personnel decisions (Highhouse, 2008), which as we now know is less effective than using structured interviews. People in general (not
just HR folks) are known to be reluctant to substitute scores and formulae for their own intuitions, despite consistent evidence that intuition is a poor substitute for evidence-based indicators. The preference to rely on personal judgment instead of systematic criteria has a long history (Grove & Lloyd, 2006; Highhouse, 2009; Meehl, 1954). Interestingly, criminal profilers who attempt to identify serial killers from the details of crime scenes turn out to be only slightly more accurate at the task than lay people (Dingfelder, 2010; Snook et al., 2007).

On other topics, SHRM members gave more research-consistent answers. A full 96% accurately rated as false the item, “Leadership training is ineffective because good leaders are born, not made.” A total of 88% of SHRM respondents accurately answered as true, “Teams with members from different functional backgrounds are likely to reach better solutions to complex problems than teams from a single area;” as did a total of 81% who correctly answered true to, “Most employees prefer to be paid on the basis of individual performance rather than on a group or organizational performance.” Similarly, 62% correctly answered true on two items related to specific management practices and performance: “There is a positive relationship between the proportion of managers receiving organizationally-based pay incentives and company profitability,” and, “Companies with vision statements perform better than those without them.”

The average SHRM sample score on this quiz was 57 (based on the percentage of items answered correctly). Still, there was a lot of variation. Beliefs consistent with the research findings were greatest for practitioners in higher organizational positions, with advanced certification in HR or who read the
academic literature. For example, practitioners who indicated that they usually read HR journals averaged 3 points (i.e., 11%) higher. Notably, more than 75% of those surveyed indicated they had never read any of the top three OB journals.

Sanders, van Riemsdijk and Groen (2008) replicated the SHRM study in a survey of 646 Dutch HR managers. Their results are similar to SHRM’s American sample. Again, the greatest differences between beliefs and evidence were for items related to employee selection and recruiting. Dutch HR managers scored higher when they were more highly educated or read journals, as did the SHRM members. In addition, Dutch respondents scored more highly when they held positive attitudes toward research and evidence use.

Additional studies tested the generalizability of these findings to other populations. Pepitone (2010) assessed the knowledge of 336 mid- to high-level U.S. organization managers using the same quiz Rynes and her colleagues developed. His findings reveal virtually identical knowledge levels, with the same average of 57% correct. Timmerman (2010) found a similar knowledge level among undergraduate college students (58% average), although MBAs scored slightly but significantly higher (62%). Undergraduates and MBAs consistently missed the same seven items, which overlapped six of the most commonly missed items by HR managers. Across all four groups, the pattern of right answers (from highest percentage correct to lowest) was similar.

These results, if representative of the larger populations from which participants are drawn, suggest that none of these groups is particularly aware of OB findings. Note that the test items focus on common organizational practices,
not arcane or rarely needed information. The items are in no way esoteric. It is also the case that MBA education may modestly increase knowledge levels, a finding providing educators a ray of hope.

These results beg the question why educated managers believe what they do. Results from the quiz may be due to lack of knowledge. Or, it may be that practitioner misperceptions and false beliefs develop prior to their becoming managers, consultants or HR professionals -- and unless education focuses considerable attention on evidence, what “they know that ain’t so” remains unchallenged. How we can effectively address this “awareness problem” depends on its underlying cause. If the pattern of results stems from fundamental contradictions between evidence-based principles and deeply held beliefs, merely providing more information may be insufficient to change minds (Highhouse, 2008).

Practitioner Involvement in Research

Part of the professional activities of practitioners in evidence-informed fields is participation in research. In medicine and nursing, practicing physicians and nurses frequently are involved in carrying out both basic research and clinical studies. In much the same way, organizational practitioners have the potential to conduct and/or participate in research. Indeed, historically practitioners have been quite active in OB research. As reported by Anderson, Herriot and Hodgkinson (2001), between 1949 and 1965 practitioners authored 36% of the articles in one of the field’s most prestigious journals, *Journal of Applied Psychology* (JAP), including 31% of articles written by practitioners alone. Tom Weber’s study
evaluating leadership training described earlier is one such study. More recently, from 1990 to 2000 (the terminal year of the Anderson et al. survey), practitioners authored only 4% of JAP articles (1% by practitioners alone). Other similar journals manifest a comparable decline in practitioner-authored research. Where in-house researchers and external consultants once actively contributed to OB research, academics now dominate.

Why have practitioners gone missing from OB research? This shift toward academic production of OB research can be attributed to several reasons. First, the decline in practitioner research coincided with the rise in global competition and a short-term business focus during the last quarter of the 20th century. I suspect that one reason for the decline in practitioner-oriented research in our journals is the reduced support for in-house research on management and organizational practices. Historically, industry sponsorship has been a major source of support, funding and expertise for OB research. From ATT to Sears, to the military in the United States to Cadbury in the United Kingdom, to myriad consulting firms in North America and Europe, practitioners both sponsored and produced organizational research. I suspect that cutbacks in practitioner-conducted research ceded journal pages to academics. Over time, academics exerted stronger control over the publication criteria journals by virtue of the predominance of their work within those journals, making it more difficult to publish practitioner-conducted research. Interestingly practitioner-oriented journals (e.g., Harvard Business Review, California Management Review) are major consumers of academic
research, especially from the applied psychology area that overlaps OB (McWilliams, Lockett, Katz & Van Fleet, 2009).

Despite the aspiration for OB research to be useful to practice, lack of practitioner involvement in research is a big problem. Without practitioners helping to focus research on the actual conditions and challenges they face, we know less than is optimal to make findings actionable. Science-oriented OB research tends to tell us about a single effect in isolation. Thus, we may know that A tends to increase B. Yet a real situation also can involve C, D and Z (perhaps adding the layers of a challenging job, limited information and several people with a say in the situation). A decision maker trying to take all these matters into account doesn’t have a straight path to an answer -- a problem that confronts evidence use in other fields too. DeAngelis (2010) provides a relevant example from clinical research. She describes how mental health service providers can confront patients who are not only depressed but angry and substance-abusing too. Little clinical research prepares mental health professionals to treat this combination of patient conditions. Practice conditions aren’t as neat and tidy as the effects that targeted, science-oriented studies identify. Without practitioner participation in the research process, we are less likely to know what kinds of actual everyday decisions they face for which evidence is needed. Thus, lack of practitioner involvement in research is a double whammy for EBMgt. Their low participation levels suggest that practitioners typically don’t see organizational research as useful or relevant. Further, their non-participation exacerbates the
research-practice gap by limiting the kind of research that gets done. The result is research even less widely known, used or useful in the eyes of practitioners.

**Implications**

Evidence suggests that OB research is not widely used. This research-practice gap has motivated many calls for EBMgt (e.g., Latham, 2007; Rousseau, 2006; Rynes, 2001, 2007). The gap has multiple explanations, including the lack of knowledge on the part of many practitioners regarding what might be called basic “OB 101.” At the same time, awareness and knowledge aren’t quite the same. Practitioners can be familiar with what the science says but not believe it. Taken-for-granted beliefs that are at odds with scientific evidence are at the core of Pfeffer and Sutton’s (2006) well-stated notion that EBMgt’s challenge isn’t just what practitioners don’t know but “what they know that isn’t so.”

Practitioner involvement in research, endemic in other evidence-based professions, is nearly absent in management. Limited practitioner involvement in research limits real-world managers’ exposure to research ideas. It also affects the very nature of the research available to help tackle managerial and organizational problems. Thus we are likely to have both a communication and a knowledge-production problem. At the same time, evidence exists that companies whose HR managers read the academic literature perform more highly than companies where they don’t (Tepstra & Roszell, 1997). We next consider what we can do to turn the evidence-informed practice of a few savvy managers into a way of life for more practitioners in contemporary organizations.
So What Next?

The central mission of EBMgt is not new to OB: to conduct research that both advances scientific inquiry and enlightens practice. So how might we best proceed to realize this heretofore “elusive ideal” (Van de Ven, 2007)? I suspect the necessary steps involve things we already do, as well as some new activities. Since EBMgt is something that practitioners do with the support of researchers and educators, let’s explore the contributions each might make to closing OB’s research-practice gap.

Practitioners

Regardless of the management field involved, the need to close the research-practice gap has many of the same implications for practitioners. Recommendations of a more general nature are presented in Rousseau (this volume) and Speicher and Adams (this volume). Here, I offer two recommendations that capitalize on the reasonably advanced state of OB’s knowledge base.

The first is learning fundamental evidence-based OB principles. Formal training, directed reading and developing a network of evidence-savvy contacts are some ways evidence-based managers acquire this knowledge (see Zanardelli, this volume). In a similar fashion, Locke’s *Handbook of Principles of OB* (2009) offers and gives guidance for how to use its practitioner-friendly research summaries. Such reading can help develop a more sophisticated understanding of why certain practices work and others don’t. Practitioners -- managers in particular -- often need to act quickly. Thus, evidence use comes more readily to
the practitioner, like Jim Fuchs in our opening discussion, who acquired the knowledge before it was needed. User-friendly models and other heuristics that help busy practitioners recall and use evidence-based findings can support both learning and use (Larrick, 2009; Rousseau, this volume).

Second, practitioners can become involved in research themselves. This involvement can take many forms. Pilot studies can be used to test interventions suggested by scientific evidence for use in a particular work setting. For example, to see how best to implement flexible hours, a group of supervisors might be trained in ways to promote flexible schedules. Then the resulting outcomes (new scheduling arrangements, employee satisfaction, attendance, etc.) can be contrasted with the outcomes of a comparable group of supervisors not yet trained. Or, managers can collaborate with local academics to obtain evidence by systematic review or new research on a practice question. No matter the approach taken, direct experience with research problem formulation, design/measurement, testing and interpretation is a powerful tool for enhancing critical thinking and knowledge of what works and how. Providing a site for research in collaboration with academic researchers can be a way to ease into this mode of professional practice (Zanardelli, this volume). Many OB-related practice questions are particularly well suited to a single firm or work setting as Barling, Weber and Kelloway (1998) demonstrate.

Educators

Educators are inadvertently contributing to the research-practice gap by not teaching the evidence or teaching it in a fashion that is not readily applied
(Rousseau & McCarthy, 2007). Primary reading materials in many management programs include popular writings by armchair theorists and non-scientific opinion pieces by consultants and executives. In an evidence-based curriculum, students would learn both the principal research findings relevant to a practice area as well as how to apply them (Rousseau & McCarthy, 2007). Educator neglect of OB’s well-established evidence base undermines the professional development of organizational practitioners. It fosters reliance on gut and intuition over facts and systematic knowledge. In contrast, teaching with an emphasis on evidence-based practice helps students identify and pursue the goal of greater cumulated knowledge and expertise over the course of their careers.

OB courses need to be taught by faculty familiar with relevant research. In their study of the evidence base of MBA teaching, Charlier et al., (in press) found that faculty lacking Ph.Ds did not base their courses on evidence. Adjuncts often taught these non-evidence-based courses and based their teaching upon their own experiences. There were no effects on the teaching of OB evidence from nature of the business school itself, its rankings, or whether it had a doctoral program or research-active faculty. These findings suggest that our central concern should be that the faculty teaching in OB courses are knowledgeable regarding OB research and know how to teach that evidence. Evidence-based textbooks (Pearce, this volume) and research syntheses (Briner & Denyer, this volume) are useful in helping faculty to update their teaching with relevant research. Otherwise popular textbooks reputed to present up-to-date research findings often fail to meet to mark (Rynes & Trank, 1999; Trank & Rynes, 2003).
Specific teaching practices in OB can reinforce the relevance of evidence to the well-informed practitioner. In-class demonstrations of research findings play to the tendency to value what we experience ourselves. A good illustration of this tendency is demonstrating the effects of positive illusions, where people tend to harbor overly positive beliefs about themselves on attributes for which they receive little feedback (Taylor & Brown, 1998). Ask students to write down the percentile at which they stand individually compared to people in general on driving skills, looks and intelligence. (The average answer is never less than 70-80%! On driving skills, no less!) Class participation in research also drives home core behavioral principles and stimulates the critical questioning that deepens understanding. Consider Gary Latham’s (2007, p. 1029) approach of involving managers in executive programs and MBA students in his research:

“I present a question to them in the classroom (e.g., Do you think bias can be minimized, if not eliminated, in a performance appraisal?). I encourage strong debate among them regarding the questions I pose. Then I immediately involve them in an experiment to obtain the answer… [they] love the suspense as much as I do in seeking the answers. Anecdotal evidence suggests that the research results are subsequently applied by the managers in their respective work settings. Of further benefit is the participants’ newfound appreciation of how the answers were obtained -- through systematic empirical research.”

Transferring this knowledge from the classroom to real-world practice needs to be woven into the fabric of our courses. Concepts and principles should
be presented in ways consistent with how they will be used in practice (Ambrose et al., 2010; Goodman & O’Brien, this volume). Articulating a vision is a case in point. As noted above, successful managers commonly convey a vision for the future to their organization’s members. However, accompanying support practices such as goal setting and rewards aligned with the vision are probably used a lot less frequently and possibly not very effectively. Teaching concepts in modules that demonstrate how they can be used together can increase their effective use. For example, concepts such as vision, reward contingencies and goal setting combine to form a bundle of mutually supporting practices in shaping behavior. Such factors can, for example, be presented as facets of change implementation (Goodman & Rousseau, 2004) or part of the infrastructure for high-performance teams (MacDuffie, 1995). Helping practitioners think through the connections among sets of concepts or practices can make it easier to apply them successfully.

Lastly, educators need to more actively investigate the conditions that promote or interfere with student acquisition of knowledge and skills in our educational settings. Identifying how lay beliefs influence reactions to research may prove key to improving our ability to help students acquire and apply OB-related knowledge. Given the social and interpersonal nature of OB research, practitioners are particularly likely to have developed their own beliefs about OB phenomena -- beliefs that fall into Pfeffer and Sutton’s category of what we know that isn’t so. Thus OB education has to recognize and work to overcome false beliefs learners hold and then to more effectively educate them in threshold concepts, insights that if not acquired keep students from fully understanding.
certain basic OB principles. Consider why intuition, though a poor prognosticator, remains so seductive. It turns out that most people reason backwards (“the person I hired was successful, so I made the right decision”). People tend to forget that in the real world, decisions are made looking forward, without the results in hand. We typically have no information on what might have been if we had hired the people we chose not to at the time. Hindsight bias is a plausible source of many erroneous beliefs. Management educators need to identify and overcome such likely impediments to learning (e.g., backward focus). We then need to develop activities that develop insight and mastery of threshold concepts (e.g. forward focus). Both may be critical in order for learners to understand, accept and be willing to use evidence (cf. Ambrose et al., 2010).

Researchers

I have three recommendations specific to OB researchers. First, let’s capitalize on the field’s strengths -- namely, its accumulation of programmatic research -- and more systematically review and evaluate the conclusions that can be drawn from its bodies of evidence. OB’s cumulative advantage contrasts with other management fields less concerned with replication and cumulative findings (cf. Kilduff, 2007; Mone & McKinley, 1993). Replication and cumulative findings in OB have not always been viewed positively. Critics have raised concern that the field lacks openness to innovative topics (cf. O’Reilly, 1991). I don’t believe that is a valid criticism (Rousseau, 1997) and see OB’s focus on the accumulation of knowledge as a sign of the field’s maturity and scientific values (Whitley, 2000). Along these lines, OB’s body of work is methodologically diverse, with many of
its principles derived from findings that hold across experiments, cross-sectional and longitudinal studies and in-depth qualitative work. As such, research demonstrating convergent findings across multiple methodologies characterizes the more advanced sciences (Whitley, 1984, 2000). At this juncture, contributing to EBMgt offers OB opportunities to expand its activities to include greater research synthesis and greater involvement in and support for practice-based evidence.

A huge volume of potentially relevant OB research findings awaits synthesis, to figure out what we know, what we don’t and the concomitant implications for practice (Barends, ten Haven & Huisman, this volume; Briner & Denyer, this volume). Ensuring practitioners have access to summaries of OB evidence is a major stumbling block to the field’s EBMgt contribution. Journals can be expensive. It also is difficult to draw conclusions from the single studies they tend to publish. Systematic reviews regarding important practice questions are in short supply, despite the available research base. When they are undertaken, these summaries and syntheses need to go beyond quantitative meta-analyses. In many cases, practice questions necessitate syntheses of qualitative information (Denzin, 1978; Van de Ven, 2007). Research synthesis takes many forms (Rousseau, Manning & Denyer, 2008). All are valid components in the EBMgt repertoire and in advancing our science. Researchers, beginning with their doctoral training, can contribute to our knowledge accumulation and capacity to ask new and important questions by more adequately synthesizing existing research to figure out what we already know now. We may know more than we
think we do. (N.B. Orlitzky, Schmidt and Rynes (2003) do a nice job of demonstrating this point in their meta-analysis of the link between corporate social responsibility and firms’ financial outcomes.)

The practical goals of OB are more readily accomplished with better understanding of the conditions of practice and practitioner needs. EBMgt implementation, as in the case of EBMgt teaching above, would benefit from greater insight into practitioner intuitions and beliefs. Such research can help identify the conditions and perceptions that interfere with or aid the uptake of evidence-based practices. Practice-oriented research lends itself to collaboration. It can bring practitioners and academics together to make sense of and solve a real-life problem. Practitioner participation is key to insights into organizations, real-world practices and conditions of use (Vermeulen, 2005, 2007). Practice-oriented research also allows the testing of practitioner/“lay” theory, since false knowledge is a barrier to effective practice (Pfeffer & Sutton, 2006). Persistent faith in the accuracy of intuition is perhaps the most significant (and most often incorrect) lay belief (Highhouse, 2007). Research is needed to investigate both the conditions that sustain ineffective practice and those that facilitate effective practice. Significant opportunities for knowledge generation and application lie in the intersection of research/education, education/practice and research/practice.

A final research implication is the need to begin developing a knowledge product particularly focused on the end user: action guides and implementation manuals based on evidence. Action guides provide procedural knowledge regarding ways to act upon evidence-based facts (the declarative or what-is
knowledge described above). These guides help make effective practice easier by taking organizational facilitators and barriers into account. Frese and his colleagues (this volume) describe a series of studies evaluating implementation manuals developed to support evidence-based practice among African entrepreneurs (Koop, De Reu, & Frese, 2000; Krauss, Frese, Friedrich, & Unger, 2005). These action guides detail steps in proactive business planning, relevant metrics for success, and ways to correct or adapt plans that failed or were difficult to implement. Their development benefits from researcher-practitioner collaboration.

Picking up our example of the impact of flexible scheduling on workers and firms, recall Perlow’s (1997) study of the kinds of problems flexible schedules create. An action guide might be developed based on such research to address how to carry out flexibility effectively. A guide of this nature might describe the kinds of adjustments flexible schedules need if their initial implementation creates problems. The guide’s use can then be evaluated and redesigned for impact on effective practice, per the approach taken by Frese and his colleagues (Koop et al., 2000; Krauss et al., 2005). With its focus on the actual practices managers and organizations use, OB’s practice-oriented evidence can aid training and development to support implementation and provide insights into the facilitators, barriers and adjustments that affect it.

**Conclusion**

Hundreds of evidence-based principles from Organizational Behavior contribute to the scientific basis of EBMgt, a foundation that continues to expand and
deepen. OB’s scientific research can be relevant to practice, just as its practice research can produce valid knowledge in the scientific sense. Recognizing the value of both types of research promotes new forms of knowledge. Such knowledge makes it easier to create and inform evidence-based decision-making and practices. Furthering OB’s contribution to EBMgt requires certain activities on the part of practitioners, educators and researchers: greater involvement by practitioners in research creation, interpretation/translation and use; greater effort by OB educators in helping practitioners learn to use evidence; and their joining of forces with researchers to better evaluate, synthesize and make available OB research to practitioners. Making the use of OB evidence a reality requires the complementary and joint efforts of practitioners, educators and researchers.
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