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Assessing the Uptake of Evidence-Based Management: A Systems Approach

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To assess how evidence-based industrial–organizational (I–O) psychology is, Briner and Rousseau (2011) used a list of some of the characteristics of evidence-based practice to generate a report card of sorts (cf., Briner and Rousseau, Table 2). The list of characteristics struck us as a collection of snapshots, some more informative than others, of the state of evidence use by I–O psychologists. Although the brief description of each characteristic offered hints at how some of them might fit together, the next step, in our opinion, is integrating these pieces into a system—to see how everything fits in the big picture. In the spirit of evidence-based practice, such an integration would allow us to begin understanding the mechanisms, and evolution, of how evidence moves from being generated to being used in practice. From a practical standpoint, an understanding of mechanisms would guide us in strategically planning where to direct our change efforts to improve the system and thoughtfully troubleshoot it as we go.

One path to integrating the pieces begins with reframing Briner and Rousseau's question of how evidence-based I–O psychology is into the question of how I–O psychologists are involved in the consumption of evidence to make decisions about management practice. (By ''consumption,'' we mean any step in the process, from the generation to the synthesis to the application of evidence to practice.) Thus, the system we propose is one that describes the consumption of evidence by I–O psychologists. Briner and Rousseau identified several of the stakeholders in this system, including academic researchers, in-house I–O psychologists, and middle managers. Each of these is related to the others to some degree and in some capacity. Each has one or more roles in the system. As a result, each has some impact on how evidence is ultimately used in practice. The basic structure of the evidence consumption system in I–O psychology might look as follows:

1. Academic I–O psychologists train new I–O psychologists and provide the field with a significant proportion of nonproprietary I–O research.
2. I–O psychologists are boundary-spanning knowledge brokers who translate academic research into practice.
3. Middle managers are the clients who use the evidence provided by I–O research to develop, or hire I–O psychologists to provide them with, practice solutions.

Using this basic structure, one can consider, and even empirically test, where each of the characteristics that Briner and

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Rousseau identify fit in. For example, what effect does knowing the term ''evidence based'' by the different stakeholders have on the use of evidence-based practices? Part of the answer might be that it affects who pushes or pulls (or both) evidence-based practices through the system. The middle manager may not know the details of why or how her I–O psychologist gets results, but she values him because he does. Other managers insist on seeing the evidence before adopting a course of action (Pfeffer & Sutton, 2006).

Similarly, one can ask to what stakeholders in the system do systematic reviews and primary research articles need to be made available? Are middle managers really likely to be *direct* consumers of such material? Consider, for instance, the rough analog in medicine of the manager as seeker of evidence: Physicians tend not to read the primary medical literature or even Cochrane's systematic reviews. Rather, they usually rely on secondary sources that provide quick, practical answers at the time and point of care but that vary in their degree of reliability, relevance, and readability (for a review see Straus & Haynes, 2009).

Something can also be learned from the analog in medicine of the manager as consultee. Patients, who are the final consultees of evidence-based medicine (EBM), rarely read peer-reviewed medical literature. They are, however, increasingly informing themselves about medical practice by consulting the popular press and the Internet. Many patients are, in fact, unaware of the concept of ''medical evidence,'' and a surprising proportion hold beliefs about medicine (e.g., ''more is better,'' ''newer is better,'' and ''you get what you pay for'') that make them both wary of evidence-based practice and demanding the latest, flashy medical treatments (Carman et al., 2010). And yet, EBM is becoming increasingly established despite this lack of pull, and in some cases resistance, from patients.

What does evidence consumption look like in I–O psychology? Taking a systems approach forces one to ask how each stakeholder affects the process of evidence consumption, how they facilitate or impede the process, why, and what steps can be taken and when to facilitate the process. To address these questions, one would consider how each stakeholder's goals, motivations, skills, timeframes, and, ultimately, accountability affect their respective roles in the consumption process and whether any of these might change. With each answer, one fleshes out the system model in its past, present, or potential state and is left better able to diagnose bottlenecks or blockages in the flow of evidence from generation to synthesis to application. It also leaves one better able to strategically address Briner and Rousseau's calls for the generation of systematic reviews and for practice-oriented evidence.

The story of how EBM is (still) establishing itself can be understood as the evolution of such a consumption system, one that is to some degree self-organizing. Briefly, although some of the core concepts of EBM appeared as far back as the 1600s, it was not until 1971 that the Scottish epidemiologist Archie Cochrane published the work that started formalizing the notion (Cochrane, 1971). During the 1980s, a critical mass of forward-thinking physicians and scientists (particularly at McMaster University) began challenging the tradition, intuition, and uncontrolled experience bases of much medical knowledge and developing and publishing specific tools to evaluate medical knowledge (http://www.ebem.org/usersguidecitation.html, accessed August 30, 2010).

At the same time, observations of wide geographic variations in medical practice without evident differences in need (http://www.dartmouthatlas.org) led to calls for practice guidelines based in the best available science. The term ''evidence-based medicine'' was coined in 1990 by Gordon Guyatt and was quickly followed by calls for evidence-based practice guidelines by Eddy (1990). During the 1990s, EBM experienced rapidly expanding acceptance in academic medicine and subsequently in practice (although not without instances of backlash), and many medical

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schools both adopted it into their curricula and established research groups devoted to EBM. The methodologies of systematic reviews, meta-analyses, and practice guideline development quickly advanced and moved beyond clinical epidemiology to integrate patient values into the practice equation.

Professional medical associations soon became involved in developing practice guidelines and, in so doing, discovered that there were many practice-relevant knowledge gaps. This led to pressure on research agencies to redirect research toward these critical gaps, and so followed a shift in the kind of research that was conducted. At the same time, health care payers realized that EBM and evidence-based guidelines offered the potential to both improve patient outcomes and reduce the widespread use of costly and ineffective care. Consequently, they are now changing their incentive structures to favor health care providers' adoption and implementation of evidence-based practice guidelines.

Ultimately, using a systems approach to assess how evidence-based I–O psychology is confers at least three benefits. First, framing the problem of (low) evidence-based I–O psychology in terms of an evidence consumption system would clarify our understanding of the stakeholders and factors, and how they are related to one another. This would allow us to more meaningfully and accurately assess how evidence is or is not being used, by whom, and why. Second, a systems model would allow us to meaningfully compare different systems of evidence consumption (e.g., management, medicine, education, and public policy) and gain insight into where and how such comparisons are informative or misleading. Finally, if our goal is to further evidence-based I–O psychology, then a systems understanding would allow us to plan more appropriate change strategies (e.g., how to create demand from managers) and to troubleshoot their implementation.

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