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The Dilemma of Trying to Understand the "Real World"

by Mikko Ketokivi, Helsinki University of Technology

Behavioral theory is rapidly gaining popularity in operations management (OM) research (e.g., *Journal of Operations Management* special issue in 2006). The idea, simply put, is to incorporate the "human element" into our research. The goal is ambitious and admirable: to understand decisions made in authentic decision situations.

My argument is that we face a dilemma in trying to incorporate the human element, and that the sooner we acknowledge this, the less confused we will be. Confusion abounds in the general strategy literature already (e.g., Bromiley, 2005), and avoiding confusion in OM requires some preparation. Understanding the dilemma will also safeguard us from unwarranted optimism about the prospect of understanding authentic decisions.

The Dilemma and Its Manifestations

The dilemma, succinctly stated, is this: we are always required to make simplifying assumptions to keep arguments tractable, yet, with every simplifying assumption the risk of abstracting out something pertinent increases.

Consider the business location decision. Should the assembly plant of the consumer products division be built in mainland China or in Malaysia? How would an OM researcher—eager to incorporate behavioral theory—approach this authentic decision situation? What kinds of assumptions would be appropriate?

In light of the basic tenets of behavioral theory, one might first incorporate *bounded rationality* (Simon, [1946] 1997). But what exactly is the assumption? Optimization under uncertainty? Perfect rationality with a whiff of white noise added? An assumption of costly information?

For the sake of argument, let us embrace the—many would argue reasonable—assumption that information has a cost. Could we derive a theory of decision-making from the idea of optimizing search effort under bounded rationality? We certainly could, but it would not be a behavioral theory because it is well known that in complex decision situations decision-makers simply do not engage in optimization *of any kind* (Simon, [1946] 1997). Theories that incorporate optimization (rationality) favor theoretical simplification over understanding the decision, thus running squarely counter to behavioral theory (Bromiley, 2005). Simon ([1946] 1997, p. 119) elaborates: "[Decision-makers] choose without first examining all possible behavior alternatives and without ascertaining that these *are* in fact all the alternatives. Because they treat the world as rather empty and ignore the interrelatedness of all things (so stupefying to thought and action), they can make their decisions with relatively simple rules of thumb that do not make impossible demands upon their capacity for thought."

Behavioral theorists take human behavior seriously. They do not pick and choose assumptions as they see fit. Consequently, merely relaxing one or two of the "unrealistic" assumptions of extant theories does not constitute behavioral theory. The quote from Simon also demonstrates that from assuming bounded rationality it does not follow that decisions are boundedly rational. What Simon describes was not boundedly rational behavior but *human* behavior, which is affected by a host of factors, many of which have little to do with rationality, bounded or otherwise: politics, agency, emotions, intuition, coercion, deception, mistake, randomness,

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social desirability, et cetera. March (2006, p. 86) elaborates: "[Some of us] are more inclined to see the limits on rationality as minor perturbations, easily accommodated within some variation of neoclassical economic theory, than as fundamental challenges." For the behavioral theorist, giving up rationality constitutes a fundamental theoretical challenge, which is not solved by adding an error term to the model.

At the same time, it is impossible for a theorist to consider everything that affects decision-making. No audience is interested in eclectic theories that incorporate everything but the kitchen sink. Yet, leaving out any one factor may fundamentally hamper one's understanding of the decision. Hence the dilemma.

There is an intriguing finding with regard to plant location decisions in particular that merits attention. In a classic study published in the prestigious *American Economic Review*, Mueller and Morgan (1962, p. 209) found that the most common reasons for plant location decisions reported by managers were "personal reasons" and "chance." Now there is a finding for the emerging behavioral OM theorist to digest. To be sure, contemporary researchers have reported a plethora of rational reasons as well (e.g., Brush et al., 1999). Let me suggest, however, that this likely reflects the fact that these researchers have typically spoon-fed their informants a rational frame of reference. Specifically, the informant is asked to choose from a list of reasons that lend themselves to rational analysis (e.g., tax incentives and labor costs). Conspicuously missing from this list are—you guessed right—personal preference and chance. Of course, in many research settings incorporating the less-than-flattering options is not a legitimate thing to do. I would no doubt feel very uncomfortable asking a corporate-level Senior Vice President of Operations, whom I have just met for the first time, whether the decision to locate the plant in Malaysia was simply a matter of a coin toss; although my embarrassment would be dwarfed by the VP's confession that the main decision criterion that the six-month feasibility study produced was "heads, China; tails, Malaysia."

Who Gets to Decide What Behavioral Theory Is?

Any declaration regarding the scope of behavioral theory assumes that someone has the authority to define the domain. Arbitrariness of all definitions notwithstanding, every researcher who uses the label must acknowledge the pioneering contributions of the Carnegie trio: Richard Cyert, James March, and Herbert Simon (Cyert and March, [1963] 1992; March and Simon, [1958] 1993; Simon, [1946] 1997). Talking about behavioral theory without referencing these works is likely to invite confusion. As an analogy in OM research, writing about the focused factory without referencing Wickham Skinner's work would be puzzling.

To be sure, OM researchers are likely to develop their own, somewhat idiosyncratic definitions of and approaches to behavioral theory. But if we wish to build on the pioneering work in organization theory and, in particular, share our insights with the organization theorist, we must use terminology consistently. Most importantly, understanding the potential causes of confusion in OT might help us avoid similar confusion in OM.

Who Gets to Decide What Reality Is?

Oh gosh, *that* stuff, can we go back to talking about correlations and regression models? Ontological and epistemological questions are uncomfortable territory for most of us, and we struggle to see their relevance in our research.

There is, however, an important ontological question that anyone who genuinely wishes to understand the "real world" cannot sidestep. Since we are unable to incorporate all the assumptions that are required to understand an authentic decision, to what does our theory ultimately refer? Approximate reality? No, the only defensible answer is that it is *the reality constructed by the researcher*. Starbuck (2004, p. 1250) elaborates: "The systems we are trying to understand are much more complex and flexible than prevalent research methods are capable of comprehending. The phenomena that I once called 'realities' are partly products of our research." All claims to the contrary are either ignorant or dishonest.

Some of us like to draw parallels between OM and the natural sciences. This is almost guaranteed to lead to misrepresentation and misunderstanding. When physicists examine phenomena, they often engage in *idealization*: conclusions are derived by assuming point masses, perfectly elastic molecules, spheres of perfect roundness, and the like. Such idealization is, however, fundamentally different from *abstractions* OM scientists make in trying to understand their object of inquiry. In contrast with the physicist, OM researchers trying to understand authentic decisions unavoidably abstract out pertinent factors from their models, which is why the idea of *approximating reality* or *approaching the truth* is merely wishful thinking.

The position is well established in the philosophy of science: "Given the notorious difficulties with notions of 'approximate truth'… it is implausible that characterizations of scientific progress which view evolution towards greater truthlikeness as the central aim of science will allow one to represent science as a rational activity" (Laudan, 1981, pp. 144-145). As a reminder of this, the concept "real world" appears in quotation marks throughout this essay. Frustrating as this may be, I want the reader to feel a little uncomfortable every time the concept appears. Indeed, the quotation marks symbolize an important aspect of the dilemma.

Behavioral theorists lose all credibility if they become naive ontological realists who assume that the breathtakingly complex "real world" is waiting to be discovered (with some error term) by our rationalized reconstructions and linear regression models. All research results are reconstructions, representations, and interpretations, *not* approximations. But this is not an altogether pessimistic stance. Quite the contrary: the upside of a constructed reality is that it can be changed (Starbuck, 2004).

Coping with the Dilemma—A Personal Reflection

We truly face a *dilemma*, a problem that does not have a solution. There are only alternative courses of action, all of which have their strengths and their weaknesses. I am partial to adding complexity to arguments instead of simplifying. In my research career, not once have I encountered a situation where something turned out simpler than I had previously thought, or that my theory needed simplification instead of elaboration. Echoing this experience, here are a few guidelines to an emerging OM behavioral theorist:

1. Revisit your assumptions about the decision maker. Abandon models that look at decisions by abstracting out the decision-maker.

2. Give up simplicity. Complex questions do not have simple answers. Do not abuse Ockham's Razor: Ockham never suggested that simple explanations are better or more likely to be correct. And to be sure, the 14th-century logician and philosopher is not an expert on operations management and information systems of the 21st century.

3. Be parsimonious, but do not equate parsimony with simplicity. Parsimony does not mean you have to simplify your argument, it means you should avoid unnecessary assumptions. Do not incorporate bounded rationality just because the concept appeals to you. Even in the most established and the most rigorous management theories, authors tend to make assumptions that they do not need in their argument (Peli et al., 1994).

4. No matter what your assumptions are, making them explicit has many benefits (e.g., Blalock, 1991, p. 332). Do not leave your audience guessing.

5. Understand that assumptions are made about theory, not the "real world" (e.g., Blalock, 1969, p. 11). Assuming bounded rationality does not mean you assume decisions in the "real world" are boundedly rational. We use assumptions as premises in our theorizing, but they are not declarations about the object of our inquiry. Statements about the "real world," if any, emerge at the end, not the beginning of research.

These guidelines are meant not so much as normative as an invitation to self-reflection. Without knowing the specific research question and the context, giving normative advice is premature.

In a recent paper co-authored with Fabrizio Salvador (Ketokivi and Salvador, 2009), we thought long and hard about these questions, and I wish to acknowledge this joint work as the primary source of the guidelines listed. Our decision was ultimately to give up the title *behavioral theory* in favor of *sensible decision-making under uncertainty*. We gave up behavioral theory because we realized—with help from behavioral theorists such as Phil Bromiley—that labeling our theory of fit and focus a behavioral theory was inconsistent. The label did not add any value to our theory. Even worse, in fact, it led to confusion. A sixth guideline could be added:

6. "Labeling exercises" likely do not add value to the argument, in particular if the label is adopted from another theoretical domain. Beware in particular situations where you run the risk of confusing your audience.

New Theory, Better Understanding?

In a provocative essay, Schmenner (2009) argued that there is "too much theory, not enough understanding" in OM research. In what I thought of as a particularly controversial part of the essay, Schmenner suggested that "[g]ood empirical work does not need to be based on theory, it can be independent of theory."

Sounds odd enough to the conventional theorist. Let me try to interpret this from the point of view of the behavioral theory dilemma discussed in this essay:

1. Deriving hypotheses about how the "real world" operates using existing OM theories may indeed be futile. Most theories are not aimed at understanding the "real world," they are aimed at (a) filling gaps in the literature, and (b) deriving normative implications under highly restrictive assumptions. Skinner's work on the focused factory is a good example. Yes, Skinner gave us a wealth of insight on the benefits of focus, but did not help us understand why so many factories in the industry were unfocused. Why, over 20 years since its introduction, was the application of the focused factory—in Skinner's (1996, p. 8) own words—"on the slow, sputtering point on its 'S' curve"?

2. "Independent of theory" should not be read "independent of all theoretical consideration." Yes, we need to revisit our views of theory, but abandonment is not an option. If we think the field is fragmented now, consider what will happen if we just start running around looking for operations-related problems to solve? How do we keep score of which problems have been solved and which have not? How do we label them, catalogue them, and consolidate findings? The answer: theory. But perhaps a different kind of theory than what we have today.

3. Finding a gap in the literature (or theory) is not the same as finding a gap in our understanding of the "real world." We must come to terms with this: most contributions to the academic literature have no implications to managerial practice. Researchers who do not even try to understand decisions in authentic settings will find their prescriptions rejected. Managers are not fond of listening to academics critique something they have difficulty demonstrating that they understand.

I want to close with a wonderful quote from the *Harvard Business Review* interview of James March, one of the pioneers of behavioral theory. March is a scholar who has spent well over half a century trying to understand decision making. Asked whether he—with decades of ground-breaking research insights in

his arsenal—does consulting with businesses, he replied (March, 2006, pp. 84-85): "If a manager would like to talk to me, I'm inclined to respond that I almost certainly don't have anything useful to say… I think that it would ordinarily be difficult to discover any practical use for such conversations, but I may occasionally have a way of looking at things that is sufficiently different to help a manager in some marginal way… If there is relevance to my ideas, then it is for the people who contemplate the ideas to see, not for the person who produces them."

A wave of embarrassment washes over me as I dig out a paper I published three years ago and start reading the section *5.8 Managerial Implications* starting with: "Our results have strong implications for practice…"

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NAMES IN THE NEWS

CAROL LATTA, Executive Director, Decision Sciences Institute

Jatinder (Jeet) N. D. Gupta, University of Alabama in Huntsville, received the 2009 UAH Foundation Research & Creative Achievement Award for his outstanding research record in Operations Research, Information Systems, and Supply Chain Management. The citation of this award states that he "is the author of over 200 refereed articles, editor and/or author of 10 books and numerous book chapters. He is internationally recognized for enhancing the productivity and quality of organizations in manufacturing and service sectors. His work is often cited research has been published in the most rigorous and prestigious journals in his disciplines. He has held distinguished visiting professorships at universities in Australia, Brazil, China, France, Holland, Spain and Taiwan. Dr. Gupta is a Fellow of the Decision Sciences Institute. He has served as the president of the Production and Operations Management Society, vice-president of Decision Sciences Institute, founding president of the Indian Subcontinent Decision Sciences Institute, and president of the Huntsville Association of Technical Societies."
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Ram Narasimhan, Michigan State University, received the Global Leadership Award from the Pan Pacific Business Association in June 2009, recognizing his research record and promotion of global initiatives in the academe. The award was given in Shenzhen, China, at the Pan Pacific International Conference. He also received the Distinguished Operations Management Scholar award from the Academy of Management at its August 2009 meeting.
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