Philosophical Ties That Bind Practice: The Case of Creativity

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This article examines how philosophical assumptions of practice can thwart the conception, adoption, and implementation of critical actions such as creativity. Delineating positivism and interpretivism, it is argued that the former treats the world as an objective system that can be studied through scientific methods, whereas the latter conceptualizes the world as an ambiguous social construction that cannot be readily apprehended via standard empirical inquiry. This distinction is not drawn to aim another invective against positivist science but to connect it to scientific realism and scientific instrumentalism, revealing iterative mutuality. With the cultural value afforded positivism and the formal training delivered in professional schools, practitioners largely adhere to positivist assumptions. Therefore, after identifying and briefly reviewing the creativity literature as it relates to organizational change and innovation, three contrasts are drawn to illustrate how underlying assumptions prevent practices necessary for effective introduction of creative ideas and actions.

Keywords: *creativity; change; innovation; scholarship; practice*

As the objectivist Ayn Rand (2005) asserted, among the greatest achievements of the Industrial Age was the skyscraper. Early in the 20th century, these steel, stone, and glass behemoths began to dominate the horizon around large cities, especially in America. Skyscrapers were ample testimony to technological ingenuity, but more than that, they were a sign of national pride and international prestige.

The daunting height of these towers necessitated a unique mode of conveyance: the elevator. Although based on an ancient and fairly simple system of weights and pulleys, elevators were mechanical marvels, whisking thousands of people hundreds of vertical feet, safely and swiftly.

Well, perhaps not so swiftly.

From Los Angles to Chicago to New York, building managers' offices were flooded with complaints

that the elevators were just too slow. Riders bemoaned a maddeningly long wait in the elevator lobby and a phlegmatic pace ascending and descending. Building managers are accustomed to tenant grievances, but these went to the core of the skyscraper, compromising the entire occupant experience and deeply unsettling the captains of industry who had invested so much to make these towers wonders of the modern world.

Action was called for and was taken. Construction engineers returned to the drawing board. Working within the physical constraints proffered by girders, shaft support, and other structural realities, they exercised enormous technical skill in designing speedier and more powerful motors and lubricating pulleys to withstand the increased frictional heat. As necessity dictates invention, the result was swifter elevators.

But complaints persisted.

The problem space had always been straightforward: Elevators are too slow. And then, one day, someone somewhere—no one knows exactly who—redefined the problem space by prefacing it with two simple words: *People think* elevators are too slow. This simple reconceptualization proved profound. The solutions that electrical and structural engineers customarily relied on became obsolete in this amorphous, indeterminate space. It wasn't that elevators were too slow per se but rather that individuals *perceived* the experience of waiting for, or on, elevators as interminable, because they had nothing to engage in during the elapsed time. Once that simple realization dawned and some due research was conducted to confirm it, a range of creative solutions presented themselves. The solution that stuck—one still with us today—was to install mirrors in elevators lobbies and elevators, so that the always vain, preening, and self-curious humans had something to occupy their time until a steel carriage arrived to deliver them safely to their location.[1]

The notion that there is nothing so practical as a good theory is a veritable axiom in social and organizational science. Theories illuminate cause and effect in the service of explanation, inquiry, and application. But as the elevator anecdote reveals, theory can constrain as well as illuminate by binding the questions that are asked, the manner in which they are answered, and the means by which they are employed.

This realization has sparked intense debate about the philosophical *assumptions* that underlie knowledge acquisition (Argote, 2005). The critique, succinctly put,

is that when scholars investigate a phenomenon, their implicit and explicit assumptions may be incommensurate with the phenomenon itself. The importance of explicating theoretical assumptions and aligning them with methods of observation and analysis has received significant attention in administrative science (Bailey & Eastman, 1994; Eastman & Bailey, 1994). However, there has not been commensurate consideration of the practical importance of theoretical assumptions to organizational actors who seek to apply management research findings. With many prominent voices suggesting that management scholars heed the admonitions of Sumantra Ghoshal to create more positive, relevant, and ecologically valid research (Rynes, 2007), we believe that it is timely to extend the logic of prior discussions relating philosophical assumptions to theory and research to the world of professional practice.

Thus, the purpose of this article is to explore how philosophical assumptions affect practice. Just as scholars possess assumptions about inquiry, so do practitioners possess assumptions about practice. Be they managers, accountants, city planners, teachers, or nurses, when practitioners move to action, the procedures chosen are steered by fundamental assumptions about the world. Action will be thwarted if these assumptions and the intended practice are not compatible. The thrust of our argument, then, is that a robust parallel exists between the processes of knowledge acquisition and its practical application, with both being useful only insofar as the fundamental assumptions underlying them are properly aligned with the phenomenon at hand.

We develop our contribution in the following manner: We first concisely review debates regarding positivist versus interpretivist assumptions. This distinction draws from the relevant literature to provide a useful organizing framework, not to level a charge against the value of positive science but to explore its limitations in practice. Indeed, we extend this distinction to that between scientific realism and scientific instrumentalism, arguing that, when iteratively employed, the two are powerful compliments. We then argue that, by and large, practitioners hold positivist assumptions about practice. This is so because practitioners, and indeed the population at large, have been conditioned by the broad acceptance and cultural prevalence of scientific realism and its attendant modes of analysis. Furthermore, most practitioners have been formally trained in professional schools that

promote those aims and methods. Ultimately, these assumptions sway choices involving practical applications of theory, leading to confusion on how, and if, theory and practice should be integrated (Raelin, 2005). We then examine contemporary theory and research on creativity, arguing that preferences regarding theoretical assumptions may significantly affect processes associated with organizational creativity. We choose creativity for several reasons. First, it is a topic that has long captured the interests of both researchers and practitioners. Second, it involves processes and outcomes that are inherently complex, ambiguous, and dynamic, thus making it somewhat unamenable to positivist inquiry and application. Finally, creativity is an important force related to the creation and destruction of social structures (C. M. Ford, 1996), as evidenced by well-known research traditions related to "creative destruction" in entrepreneurship (Schumpeter, 1934) and "disruptive innovation" in technology management (Christensen, 1997). Because creativity provokes tension between novel and routine actions and structures, we believe that it provides an acute basis on which to contrast the implications of positivist and interpretivist assumptions in practice, which constitutes the subsequent section. We conclude by noting that, if theory aspires to be practical, then it should iterate between the inductive and deductive exchange of positivism and scientific realism, on one hand, and interpretivism and scientific instrumentalism on the other.[2]

PHILOSOPHICAL COMMENSURABILITY AND ITERATIVE COMPATIBILITY

Although discussions regarding the philosophy of science are often shrouded in obscure terminology and ideological pomp, the root of the matter is really quite straightforward. Any process of inquiry, whether it follows formal procedures or merely casual observation, is determined by a series of assumptions that fall along two philosophical dimensions: (a) ontology, referring to the nature of reality, and (b) epistemology, referring to the nature of knowledge and its means of acquisition (Andrews, 1998). How these two fundamental assumptions are addressed leads to two schools of though, treated here: positivism and interpretivism. It is important to note that this distinction is not perfectly clean and that the two are not diametrically opposed (Weber,

2004). Rather, these are useful terms for illustrating the implications of the assumptions listed above. We will soon argue that these terms correspond to traditions of scientific realism and scientific instrumentalism, which can be profitably integrated.

The mid-19th century saw science become the premier mode of knowledge acquisition in the Western world, but it lacked coherent philosophical bracing to distinguish itself from the previously predominant theological and metaphysical schools of thought (Bailey & Eastman, 1994). The solution came in the form of *positivism*, which has two central assumptions: The first is that phenomenon are perfectly observable, a requirement of efficient scientific examination, and distinct from one another, necessary to derive cause and effect sequences; the second is that the causality between phenomena is stable and that, all other things being equal, stays constant even with the passage of time. The world, then, is ontologically an objective and permanent structure that, epistemologically, can be perfectly known so long as certain observational methods are rigidly adhered to, such as controlled experimentation, sequential introduction of independent variables, and standards of statistical significance and reproducibility (Crotty, 1998). In positivism, knowledge is something that is "out there," awaiting discovery.

Thinkers like Auguste Comte and John Stuart Mill were the first to apply the methods and aims of physical and biological science to the human social domain (Bailey & Eastman, 1994; Eastman & Bailey, 1996). Their critical formulation was that societies, economies, organizations, and individuals were subject to incontrovertible laws in the same way as, say, cell division and planetary movements. Building on this concept in the social sciences, Burrell and Morgan (1979) stated the positivist perspective thusly: "The world is composed of relatively concrete empirical artifacts and relationships which can be identified, studied and measured by approaches derived from the natural sciences" (p. 26). Embracing this positivist worldview, American organizations have thundered forward from this point, basing much of their outlook on positivist inquiry (Hardcastle & Richardson, 1993).

With this background, the current social science debate can be readily grasped. The critique is that positivist inquiry does not fully account for the nuances inherent in social and organizational affairs. Although brevity prevents a detailed account, briefly, humans are conscious, willful creatures whose thoughts and actions—be they alone or in a group, in

the context of a family or an organization—violate the objective, observable, and stable qualities required of standard scientific inquiry. Simply put, when humans and the social structures they create and sustain, are the subjects of study, positivist assumptions are often incommensurate. In particular, rationality can be argued as a mere social or organizational construction (Habermas, 1984a), severely impeding the ability to use rationality as an objective anchor for positivism. Realizations such as these have caused many researchers in the social sciences to abandon their reliance on positivism in favor of alternate frames of thought (Bartunek, 1984).

Consequently, a number of interrelated movements that realign ontological and epistemological assumptions, designed to render them more sensitive to human phenomena, have emerged. Following Burrell and Morgan (1979), we use the term *interpretivism* to capture this contrast. Ontologically, interpretivism holds that, at least in the social world, there are few hard and fast objective facts (Hatch, 2005). Rather, the social domain is composed (rather than comprised) of interpretations constructed and advanced by individual and collective actors. Although it may be a fact that a given event transpired, the *meaning* of the fact—the nature of the social reality—is by no means so easy to determine. Epistemologically, then, knowledge is a soft, subjective, and fluid object that is based as much on experience and insight as it is on concrete, reproducible observation. The process of knowing is potentially problematic because of divergences in interpretations, which are salient and legitimate aspects of social life. Relatively stable social realities do indeed emerge, but they should be understood as constructed (as opposed to discovered) as a result of dominant power structures, and subject to negotiation and alteration (Knights & Willmott, 1989).

Fundamentally, as individuals are seen as having the capacity to idiosyncratically interpret and modify social stimuli through their own actions (Morgan & Smircich, 1980), positivist procedures are called into question. Interpretivism, then, is less concerned with scientific examination and more concerned with how action facilitates the emergence of shared social realities (Crotty, 1998). In this way, this worldview encourages applications that flexibly accommodate ambiguous social dynamics. Ultimately, interpretivism takes fashioning the circumstances necessary to advance a desired state of affairs as its raison d'être.

The parallel between positivism and scientific realism (also referred to herein as realism) and between interpretivism and scientific instrumentalism (also referred to herein as instrumentalism) goes beyond reiterating polemic territorialism to suggesting productive resolution. In a recent *American Psychologist* article, Cacioppo, Semin, and Berntson (2004) described the realist program as follows:

> Scientific realism holds that scientific theories go beyond data to posit the existence of nonobservable entities…which actually exist. According to scientific realists, the product of successful scientific research is knowledge that is independent of theory or methodology…theories grounded in the philosophy of realism attempt to describe the world as it really is. (p. 215)

The authors argued that the strength of this approach lies in theoretical specification and differentiation, the use of empiricism to perform critical tests, and parsimony. In contrast, they describe instrumentalism as follows:

> According to scientific instrumentalism, the aim of scientific theories is not to discover truth but rather to produce intellectual structures that provide adequate predictions of what is observed, and useful frameworks for answering questions and solving problems in a given domain. From this philosophical perspective, scientific theory represents convenient intellectual structures for predicting or describing in more abstract terms observable data, not actual structures in the world. (p. 217).

The advantages of this tradition are theoretical innovation and integration, problem solving, and an emphasis on the language of discovery.

Petty, Semin, and Berntson (2004) further this thinking by stating that both realism and instrumentalism are infinitely useful if scientists strive to capture the strengths of each by treating the apparent incommensurate processes of induction and deduction inherent to each in an iterative fashion. Consistent with this treatment, we propose that an interpretivist, instrumental orientation is better suited for understanding and influencing active, unfolding practices like creativity, innovation, and change. However, as we discuss in the next section, practitioners tend to see the world in positivist tones, which pose peculiar problems for practice.[3]

PRACTITIONERS' PARADIGMS
OF PRACTICE

Everyone lives by a paradigm. Conscious or not, humans harbor refined worldviews or belief systems that include, among other things, notions about nature and reality, cause and effect, and standards for discriminating a fact from a value. Compelling evidence for the existence of such mental structures comes from research into attributional judgments regarding locus of causality and cognitive representational structures like schemas (e.g., Fiske & Taylor, 1990). Indeed, this conceptualization of attributional judgment stems from the work of such luminaries as Foucault (1985) and Derrida (1984) who take being born into these mental structures as given. The use of the term *paradigms*—typically reserved for deeply ensconced disciplinary platforms like quantum mechanics—to describe individual assumptions and patterns of inquiry is intentional because, just as the former use paradigms to acquire and evaluate knowledge, so do the latter (Eastman & Bailey, 1998). Specifically, our point is that practitioners maintain assumptions about practice that are, in effect, positivist.

The first reason for this is the cultural prevalence and currency that positive science enjoys in Western societies (Hardcastle & Richardson, 1993). Beginning in earnest in the mid-19th century, science was viewed as something of a savior (Bailey & Eastman, 1994). Advances in biology, chemistry, physics, and astronomy sparked drastic improvements in medicine and material prosperity and illuminated, at least on first blush, mysteries into the operation of the universe and the human place in it. Such progress led to a great deal of faith being placed in science and, by default, positivism, as the central authority for addressing pressing cultural, governmental, economic, and individual issues. Indeed, it was so esteemed that two of the intellectual giants of the time, Auguste Comte and Karl Marx, advocated abandoning religion entirely in favor of the worship of science and its achievements (Bailey & Eastman, 1994). This impressive march has not abated. Mathematics, solid-state physics, and electrical engineering have enabled space travel and are currently driving computational technologies that are revolutionizing commerce and interaction across political and geographic boundaries. Similarly, neurology, biochemistry, and genetics are solving puzzles that seem to speak to age-old questions of procreation, pathology, and the human mind.

With such a track record, it is not a surprise, nor, we believe, an exaggeration, to assert that much of the Western world holds something akin to a scientific, positivist paradigm. Regaled—and legitimately so—with tales of its achievements and profound effect on our everyday lives, Western society has learned to respect and value science. Science, then, is a ubiquitous and powerful cultural force that shapes how individuals think about the world.

Referring to practitioners specifically, the force of positivism as a mental paradigm is amplified because most attended professional schools that rely on a curriculum favoring the principles and assumptions underlying scientism (Keedy, 2005). Whether in architecture, urban planning, public administration, or business, the assumption is that practice is best enacted through painstaking experimental data compilation, analysis, and outcome assessment. Although we in no way deny the validity of positive science as a critical tool, many have begun to voice concern about the disproportionate coverage that it receives (see, e.g., Chia, 1997; Lee, 1999; Wampold, 2003).

Schon (1983), for one, argued that the dominant paradigm of professional knowledge and training is technical rationality, which involves a fairly strict application of content to situations that are "specialized, firmly bounded, scientific, and standardized" (p. 23). But this paradigm falls short because practice occurs in an indeterminate zone, denoting its nebulous, unpredictable, ambiguous, equivocal, unstable, and conflictual nature (Schon, 1983, 1987). These qualities are common to all professional arenas and are engaged by a form of artistry and craft that requires more than formal methodologies to master. Schon further observes that what distinguishes the excellent practitioner from the merely adequate one is transcending the rigidity of technical rationality to "reflect in action." In such a way, one must not accept reality as given and must, instead, return to the multitude of actions that could occur in an unsure world (Raelin, 2005). Reflection allows solving unique problems by spontaneously and seamlessly reshaping interpretations, evoking a repertoire of past professional experiences, images, successes, and failures and then designing intervention strategies that uniquely suit the extant dynamics (see also Argyris & Schon, 1996).

Others have registered similar concern. Bailey and Ford (1996) took great pains to ground the value of the scientific paradigm for practice. But they argue that too frequently its devices dominate managerial

judgment to the point that vital problem features are not readily apprehended by scientific analysis and, therefore, are missed or dismissed. The authors' point is that the rise of this paradigm and its corresponding assumptions has triggered a decline in the value attributed to action as a means of knowing. This is especially ironic as the original model for professional education, and thus practice, emphasized the development of judgment through repeated analyses of idiosyncratic cases (Raelin & Raelin, 2006), rather than the dissemination of stable principles that can be generically applied to problems in any context.

This argument was picked up in the inaugural issue of the *Academy of Management Learning & Education* by Pfeffer and Fong (2004), who argued that business education is less successful than it could be because, in part, it fails to integrate practice-oriented experiences. A more recent issue of the same journal called for a realignment of management education toward a critical management studies perspective (Grey, 2004). Both of these articles can be seen as an endorsement of a more interpretivist, instrumentalist grounding for management training

As further support, a recent *Harvard Business Review* article by Pfeffer and Sutton (1999) maintained that companies are plagued by inertia caused not by indifference or ignorance but by knowing too much and doing too little: what they call the "knowing–doing gap." The propensity for letting talk substitute for action comes from a "smart talk trap," the elements of which include using extensive yet marginally relevant data and presenting jargon-filled, unnecessarily complicated and overly abstract arguments—both of which hinder action. Scott and Bruce (1994) argued a similar case by asserting that an overload of information can lead to confusion and limit what they dub the "bisociative" thinking style within employees, which is the creative and less rigid mindset that engenders adaptable and innovative organizations.

Why do practitioners fall prey to this trap? Pfeffer and Sutton (1999) contended that they do so because it's what they've been trained to do and rewarded for doing. Specifically, the educational experience and norms of professional programs reinforce the use of smart talk. Furthermore, smart talkers tend to be rewarded economically after they have completed their education (e.g., MBA students who take consulting jobs are paid about twice as much as those who work as plant managers).

How can practitioners avoid this trap? Pfeffer and Sutton (1999) generated several guidelines gleaned from the practices of successful firms. First, such firms have a bias for plain language and simple concepts. Second, they frame questions by asking "how"—thus explicitly prompting alternative generation and action—rather than asking "why"—thus promoting criticism and discouraging change. Third, successful firms also believe that experience is the best teacher and place more value on enacting processes in context rather than on analysis. Fourth, they see great utility in failing early and small as opposed to failing late and big. In the words of David Kelley, CEO of IDEO Product Development, one of the largest and most successful product-design consulting firms in the world: "Enlightened trial and error outperforms the planning of flawless intellects" (as quoted in Pfeffer, 2001, p. 256). Smart talk, then, encourages analytically complex proposals and promotes criticism of novel ideas and viewpoints, which, taken together, are especially unfavorable to the development and adoption of practices characterized by high degrees of uncertainty and risk.

To summarize, the ambiguous, unpredictable, and conflict-laden circumstances commonly faced in practice are incommensurate with the socialization and professional education that forms the assumptions held by practitioners (Mintzberg, 2005). Creativity is an especially nebulous and unstable phenomenon that is more subjective than objective (N. Ford, 2004). Because creativity is an extreme case that lies nearer the limits of the indeterminate zone, we believe that it provides a useful illustration of the implications of the paradigms that guide action. The following section reviews literature on creativity as one important, yet indeterminate, phenomenon demonstrating how underlying philosophical assumptions can thwart effective practice.

CREATIVITY IN APPLIED SETTINGS

The study of creativity garnered only modest attention among behavioral scientists until J. P. Guilford delivered a landmark 1950 American Psychological Association presidential address arguing that it should be a central research topic in behavioral science. His premise was that scientific inquiry could solve important applied problems in industry, education, and science involving creativity. Prominent research programs motivated by Guilford's address focused on identifying characteristics shared by highly creative individuals and developing assessments to

measure cognitive processes thought to underlie creative achievement. However, three decades of research in this tradition were excessively individualistic and generally ignored social and temporal influences on creative thought, behavior, and assessment (Amabile, 1982). By overlooking contextual influences and processes, these early approaches unwittingly limited the practical impact of decades of research, especially in organizational and professional settings where such dynamics are powerful and pervasive (C. M. Ford & Gioia, 1995). Simonton (2000) explained the cumulative impact thusly:

> Psychometric inquiries into the creative personality are…rendered less insightful to the degree that the creator has been un-rooted from his of her disciplinary matrix…Although [qualitative research] methods are much more arduous than the more commonplace experimental and psychometric investigations, they have contributed findings that could not be acquired in any other way. (p. 155)

Simonton's powerful conclusion raises provocative questions about creativity research and interventions based on positivist assumptions that, as argued herein, are incommensurate with the phenomenon. Much of the renewed enthusiasm surrounding contemporary scholarship is because of new approaches based on interpretivist assumptions better suited to apprehending critical processes. Notable contributions to this trend include Amabile's (1982) consensual assessment technique for measuring creativity, which assumes that creativity is a socially defined attribute that is only meaningful to the extent that participants in a task domain agree that it is creative. Similarly, Csikszentmihalyi's (1988) systems view describes interpretive processes that producers and consumers of creative acts undertake as they mutually determine the fate of particular solutions. Simonton's (1994) longitudinal research predicts eminence in creative domains, such as classical music and science, through complex interactions among personal and contextual factors. Organizational researchers (e.g., Drazin, Glynn, & Kazanjian, 1999; C. M. Ford, 1996) built on this work by developing theoretical proposals that describe how individual and collective sense making related to multiple constituencies and task domains interact over time to affect creativity. Overall, these contributions emphasize that creativity is a socially determined outcome influenced by complex, dynamic processes. By placing greater emphasis on "manageable" influences such as individual and collective

interpretations, contextual features, and the like, interpretive research is better prepared to yield ideas that can directly impact creative practice.

This brief overview is offered to suggest that many creativity scholars recognize that interpretivist assumptions are well suited to understanding and influencing creativity. To further develop our argument, the following section contrasts three pairs of positivist and interpretivist assumptions with direct implications for conceptualizing, studying, and managing creative behavior.

UNDERLYING ASSUMPTIONS AND THE PRACTICE OF CREATIVITY

Thus far, we have distinguished between positivist/realist and interpretivist/instrumentalist assumptions, argued that practice is largely based on the former, and enumerated reasons why this is so. Underlying our argument is that positivist assumptions are often incommensurate with critical phenomena, such as creativity, and can thus thwart comprehension and intervention. We have also shown how contemporary creativity research has considered interpretivist assumptions that facilitate, as opposed to thwart, understanding and action. We now illustrate how varying crucial assumptions can influence orientation and commitment toward creative action.

Standardization Versus Judgment

One straightforward implication of positivist/realist assumptions is that, as the world is a hard, concrete object awaiting discovery, only one accurate answer for any question exists. Uncertainty is attributed to incomplete information, as opposed to inherent qualities of phenomena, thus motivating further data collection and analysis (Guba & Lincoln, 2005). Differences of opinion necessarily imply that some are erroneous and need to be corrected. Thus, applications based on positivism/realism tacitly promote standardized, uniform interpretations at the expense of seasoned judgment. Eastman and Bailey (1994, 1998) described how this orientation evokes value-charged questions regarding advantages derived from maintaining tight controls to achieve uniformity versus loose controls to promote discretion.

Interpretivism/instrumentalism goes farther in legitimizing pluralism in judgment than does positivism. It

places social construction and interpretation at the center of inquiry by holding that knowledge is neither purely objective nor subjective (Crotty, 1998). Rather, meanings are viewed as intersubjective, which serves as a bridge between objectivist and subjectivist epistemologies (Rabinow & Sullivan, 1979). This emphasis on intersubjective knowledge construction is consistent with creativity-enhancing applications that seek to combine pluralistic views to generate variety among proposals (Glynn, Barr, & Dacin, 2000). Thus, although positivism pursues the one best method, interpretivism designs solutions that meet idiosyncratic requirements of particular social settings at particular points in time. Put starkly, this contrast depicts the difference between practice as science versus practice as art. In his article "The Death of Common Sense," Philip Howard (1994) dramatically described the ill effects of standardization versus judgment within the domain of law and public policy.

> Rationalism, the bright dream of figuring out everything in advance and setting it forth precisely in a centralized regulatory system, has made us blind. Rules preclude initiative. Regimentation precludes evolution. Letting accidents happen, mistakes be made, results in new ideas. Trial and error is the key to all progress…We have cast aside our good sense, and worship an icon of abstract logic and arbitrary words. (pp. 51)

Clearly, Howard is troubled with the artificial rigor he sees applied to social affairs. He believes that the empowerment of individuals' expertise, wisdom, and creativity must prevail over regulation to promote social well-being.

Positivist assumptions can be especially antagonistic toward creativity when they endorse uniformly applied standardized decision routines and criteria (O'Leary, 2004). Howard (1994) bemoaned this issue by recalling Mother Teresa's effort to open a shelter in the South Bronx. Rather than build a new facility, two nuns searched for an abandoned building that could be converted into a homeless shelter. Their novel approach paid off when they found two fire-gutted buildings that New York City was willing to sell for one dollar each. Reconstruction would cost a mere $500,000, in part because the nuns avoided modern conveniences as part of their beliefs. To this point, the story describes a creative attempt to solve an important problem. However, the nuns were no match for the bureaucratic decision processes that followed. For 2 years, they presented renovation plans to win approval and begin work; yet each time they were told that all renovations of multi-story buildings in New York must include an elevator. The nuns explained that their vows precluded them from using such a device, but city officials wouldn't budge. Finally, Mother Teresa gave up, explaining that the $100,000 cost of installing the elevator would be better spent on soup and sandwiches.

Standardized procedures of this nature can often lead to blind obedience that directly hampers individual and organizational creativity (Clegg, 1998). Routine options, in this case, are justified by employing rote, generic criteria with which practitioners are familiar. Consequently, seasoned practitioners are often unable to take full advantage of their judgment in pursuit of creative solutions—a process that Pfeffer and Sutton (1999) described as "competency destroying." Providing practitioners who possess expertise and experience with greater latitude to discover, modify, and test new ideas—an approach rooted in a belief in the power of pluralism—can enhance creative productivity (Hargadon & Sutton, 2000).

In sum, positivist/realist assumptions have been used to promote the development and adoption of standardized processes and criteria for justifying practice. Alternatively, interpretivist/instrumentalist assumptions suggest a more egalitarian approach in which different viewpoints enjoy greater legitimacy and are more likely to be blended into creative solutions.

Stability Versus Change

Another contrast involves implicit positions about stability and change. If, as positivism holds, human behavior is governed by stable principles, then efforts to predict and control it are widely generalizable (Luthans & Davis, 1982). That is, if research establishes robust, timeless principles, it can provide definitive advice to practitioners. For example, one might expect to improve satisfaction by manipulating the task significance associated with employees' jobs (Hackman & Oldham, 1976). This, in turn, tends to promote mechanistic thinking and expectations of immediate, determinant results (Morgan & Smircich, 1980). Practitioners will expect that limited, discrete alterations in social factors will produce dramatic results, and when such results are not forthcoming, they voice frustration with the usefulness of academic research.

Interpretivism/instrumentalism, on the other hand, addresses processes that give rise to and reaffirm the subjective interpretations that enable meaningful action (Morgan & Smircich, 1980). Rather than emphasizing principles and laws, it focuses on individual and collective sense making that produces, sustains, and changes social structures. Attention is directed to symbolic processes, such as those associated with leadership (Pfeffer, 1979) and culture (Schein, 1990), as means for indirectly affecting collective action by changing individual interpretations. Consequently, the effects of interventions may evolve slowly and give rise to unintended consequences. Indeed, change initiatives gain significant effectiveness when they are approached as imprecise, context-sensitive events that require considerable fine tuning and persistence (e.g., Armentakis & Harris, 2002; Elrod & Tippett, 2002; Gravenhorst, Werkman, & Boonstra, 2003). Structuration theory (Giddens, 1979) is one interpretivist approach well suited to bridging processes related to stability and change. It argues that structuring and structures are placed on equal footing by showing how social structures emerge from structuring activities and become external and influential on subsequent structuring processes. This logic suggests that organizational decisions are not made to "fix" or "solve" problems per se (implying an objectivist view of situation stability) but rather to take another step forward on a journey toward a desired future.

With respect to creativity, applications derived from positivist assumptions hinder the selection of creative options because their consequences are more difficult to determine (March, 1991). Analytical methods consistent with positivism emphasize negative aspects of novel proposals (e.g., risk, uncertainty) and overlook positive consequences (e.g., learning, development, enhanced motivation) that spring from the journey (Cohen & Levinthal, 1990). This is ironic and unfortunate because novel proposals serve as variations that instigate the evolutionary change associated with organizational vitality (C. M. Ford, 1996; C. M. Ford & Gioia, 2000). Without such novel proposals, organizations become stagnant and vulnerable to outside events (Dooley, 1997).

Creative variations trigger social systems to adapt to shifting environmental demands and constraints (Georgsdotter & Getz, 2004). Trial and error learning is an excellent example of a practice that is consistent with interpretivist inquiry but anathema to positivist prescriptions.

Natural Versus Special-Use Language

The final contrast entails the use of language. Languages are systems that can be characterized as having either high symbol variety paired with high ambiguity or low symbol variety paired with high precision (Daft & Wiginton, 1979). For instance, *natural* language (i.e., general verbal expression) has relatively high symbol variety with tremendous power for communicating complex and subtle meanings but is imprecise because most words are open to interpretation (Daft & Wiginton, 1979). As a result, natural language is not well suited for finely honed, objective expressions of concepts or relationships (Habermas, 1984a). More precise symbol systems such as those embodied in computer programs, statistics, and mathematics have evolved to communicate unequivocal meanings that overcome the idiosyncrasies of individuals' interpretive processes. Following Daft and Wiginton (1979) we will refer to these more restrictive, yet precise, symbol systems as *special-use* languages.

By and large, positivist social science has embraced mathematics as a language to lend the rigor associated with the physical sciences (Rabinow & Sullivan, 1979). The ability of quantitative models to order alternatives on singular criteria like net present value encourages practitioners to narrow their deliberations. The logic of interpretivist assumptions, on the other hand, argues for greater emphasis on natural language that is more tightly linked to symbolic discourse and native context that gives meaning to specific events (Morgan & Smircich, 1980). Cacioppo et al. (2004) specifically cited the language of discovery as an advantage of instrumentalism.

The work of Habermas attempts to span the gap between natural and special use language through a deconstruction approach (Habermas, 1984b). In his approach, Habermas attempts to facilitate subjective recognition between individuals by generating a shared understanding and open dialogue around various linguistic conceptions to develop a pure discourse. The attempt to develop a link between natural and special-use language may be especially relevant to the relationship between theory and practice. In general, practitioners understand through and communicate with natural language, whereas organizational researchers frequently derive conclusions and applications that rely on special-use language (Daft & Wiginton, 1979). In this sense, the phrase "academics and practitioners speak two different languages" can

be taken quite literally and stands as a critical cleft between theory and practice.

The legitimacy afforded quantitative language in applied settings further hinders creative actions. Packaged solutions with proven track records are easier to analyze and articulate with special-use language (e.g., financial analysis). Natural language may be better suited for justifying novel solutions that offer qualitative, less tangible benefits (e.g., learning, testing assumptions). Therefore, in applied settings where special-use languages dominate explicit and implicit choices, creative options will face substantial liabilities (Pfeffer & Sutton, 1999). Decision settings that consider a broad range of qualitative as well as quantitative criteria are more likely to give such options a fair hearing.

DISCUSSION AND CONCLUSION

Our purpose here has been to examine philosophical assumptions, typically unrecognized and unquestioned, that influence practice. To reveal their implications, we identified several practice-based contrasts between positivism/realism and interpretivism/instrumentalism, characterizing the former as oriented toward standardization, stability, and objective language and the latter as emphasizing judgment, change, and rich, evocative language.

The poor track record of creativity interventions has been attributed to misdirected research strategies that neglect key variables (e.g., Amabile, 1983; C. M. Ford & Gioia, 1995; Woodman, Sawyer, & Griffin, 1993). Although certainly valid, this criticism overlooks the more fundamental issue of paradigms that dominates western society in general as well as behavioral science research and practice. As a result, isolated interventions derived from mechanistic assumptions that manipulate singular factors are likely to be overwhelmed by countervailing sensibilities and well-worn organizational and professional routines.

Because we examined the limitations of positivism, one might infer that this is yet another invective. But the stance taken here is more moderate. Positivist assumptions and their attendant scientific methods are critically usefully when (a) problems can be effectively addressed by standardized solutions, (b) relevant structures and relationships are likely to remain stable, and (c) involved stakeholders demand objective, precise, uniform evaluations. Overall, this orientation promotes efficiency and control within constraints.

Although both orientations are important attributes of successful organizations, positivism can lead to obsolescence through ignoring creativity, change, and development (Hargadon & Sutton, 2000; Levitt & March, 1988). Interpretivist applications that emphasize symbolic discourse and learning through action are well aligned with modern economic and organizational challenges. Creative actions provide variations necessary to navigate shifting environmental aspects (C. M. Ford, 1996) and a uniquely useful way of generating meaning through action (Weick, 1979). Positivist methods are clearly necessary for careful implementation and monitoring, but interpretivist methods are better suited for eliciting and managing change. We fully adhere to Cacioppo et al.'s (2004) call that realism and instrumentalism should be iteratively employed in the same manner as induction and deduction.

Acknowledging the ambiguities inherent in social settings requires practitioners to spark and explore multiple interpretations. However, such practices face significant obstacles, especially in areas in which positivist practices are deeply entrenched. For one thing, interpretive applications can be riskier than routine practices. This would not be the case if missed opportunities were punished to the same extent as mistakes. However, in a world that punishes failure more than it rewards action, one is safer following tradition.

Through research and education, behavioral scientists can play an important role in legitimizing interpretivist applications that support creative action and, in doing so, enhance their relevance in applied settings. Unfortunately, tradition and inertia are powerful barriers, especially in professional schools with strong quantitative orientations and paradigmatically well-defined disciplines that entertain less intellectual variation (DiMaggio & Powell, 1984; Hannan & Freeman, 1984; Meyer & Rowan, 1983). However, it is often said that necessity is the mother of invention. Perhaps the growing need to balance efficiency with creativity in applied settings can provide behavioral scientists with an impetus to match assumptions with practices in teaching and research.

NOTES

1. Dozens of documents that recount this same story can be found by searching "elevator + mirror" on Google. Especially thorough treatments can be found at http://answers.yahoo.com/question/index?qid=1005081200005

and http://www.shmula.com/384/on-queueing-and-elevator-mirrors.

2. Although we emphasize a rather straightforward distinction between positivist and interpretivist inquiry in this article, we recognize that there are differences within these traditions, especially with respect to science's role in critiquing and affecting change to existing social structures (cf. Burrell & Morgan, 1979). We do not address critical theory traditions in this essay but believe that practitioner assumptions favor stability and that greater consideration of tensions by critical theorists could enrich professional practice (Grey, 2004). This may be especially true when applied to our illustrative example of creativity, when those currently in power often have the most to lose from innovation (Christensen, 1997).

3. Note that we use the terms *positivism* and *realism*, and *interpretivism* and *instrumentalism*, and their variants together and interchangeably.

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