



Coming in from the cold: The psychological foundations of radical innovation revisited



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ABSTRACT

Radical innovation poses a series of well-documented adaptive behavioral challenges for individuals, organizations and organizational collectives. Drawing on the insights of recent advances in the social neurosciences, the authors demonstrate how theory and research rooted in the cold cognition era of human psychology has laid microfoundations for practices purporting to help address these challenges that are fundamentally unfit for purpose. Predicated on an outmoded conception of economic actors as affect-free information processors, devoid of emotion, scholars and practitioners alike are unwittingly perpetuating a (bounded) rationality façade. In so doing, they are undermining attempts to foster the requisite transformation of mindsets and behavior. To address these unintended consequences, new theory and research is required to shed light on the generative mechanisms through which firms might create the conditions to enable them to harness the cognitive and emotional capacities of individuals and groups, an essential step for overcoming the pitfalls of bias and inertia that so often inhibit adaptation to changing environments, thus slowing progress in the development and diffusion of innovations. To further this end, the present article advances a research agenda that places emotion management center stage, arguing that, to be truly dynamically capable, firms must learn to nurture self-regulation capabilities at all levels of the enterprise.

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1. Introduction

It is now well established that the sort of radical innovation that destroys the competencies of firms (Tushman & Anderson, 1990) also poses major adaptive challenges to individuals and groups within and between firms (Abrahamson & Fombrun, 1994; Porac & Thomas, 1990; Teece, 2007; Tripsas & Gavetti, 2000). The defining feature of these adaptive challenges is that managers, employees and other stakeholders of the enterprise are typically unable to break free from the shackles of their extant beliefs and behavior when faced with major environmental shifts such as the introduction of new technologies or the entrance of radically different competitors. These behavioral shackles inhibit the personal and collective adjustments necessary to ultimately ensure the longer-term sustainability of the firm (Alvarez & Busenitz, 2001; Amit & Schoemaker, 1993; Gavetti, 2005; Kaplan, 2008; Teece, 2007; Teece, Pisano, & Shuen, 1997; Tripsas & Gavetti, 2000) and even the entire industry sector in which firms are embedded (Abrahamson & Fombrun, 1994; Hodgkinson, 1997, 2005; Porac, Thomas, & Baden-Fuller, 1989; Porac, Thomas, Wilson, Paton, & Kanfer, 1995).

Over the past three decades, managerial and organizational cognition researchers have made considerable progress in identifying psychological mechanisms that might explain why the behavioral challenges of adapting to radical innovation are seemingly intractable, at both the individual (e.g., Bateman & Zeithaml, 1989; Dutton, 1993; Hodgkinson, Bown, Maule, Glaister, & Pearman, 1999; Hodgkinson, Maule, Bown, Pearman, & Glaister, 2002; Porac & Thomas, 1990; Schwenk, 1984) and group (e.g., Peteraf & Shanley, 1997; Porac & Thomas, 1990; Reger, Gustafson, Demarie, & Mullane, 1994) levels. At the individual level, these mechanisms range from cognitive simplification strategies such as incorporating radical new developments into preexisting categories (e.g., Dutton & Jackson, 1987; Reger & Palmer, 1996), to the use of heuristics, basic rules of thumb that render decision makers biased in their judgments and hence impervious to the significance of the new developments at hand (Schwenk, 1984; Zajac & Bazerman, 1991). At the group level, research has focused on the constraining influence of collective belief systems, borne of socio-cognitive mechanisms such as vicarious learning and social identification (Peteraf & Shanley, 1997) and of higher-level cultural mechanisms that transcend organizational boundaries (Abrahamson & Fombrun, 1994; Hodgkinson & Healey, 2011a).

Common to all of these developments, however, is an underlying set of psychological assumptions that tend to downplay the potential role of affect and emotion as the fundamental inhibitors or enablers of individual and collective ability to respond to the adaptive behavioral

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challenges of radical innovation. In the wake of the Nobel Prize winning work of Simon (e.g., 1947) and Kahneman (e.g., Kahneman & Tversky, 1979), researchers have privileged effortful forms of reasoning and dispassionate analysis as a means of overcoming bias and inertia in strategic thinking, predicated on the assumption that the mere effortful processing of information that is inconsistent with prevailing mental representations disconfirms expectations and jolts decision makers into conscious reflection, thereby forcing them to revise their beliefs (see, e.g., Dutton, 1993; Hodgkinson et al., 1999, 2002; Louis & Sutton, 1991; Reger & Palmer, 1996).

Responding to recent calls in the organization sciences to provide accounts of strategic adaption that have greater behavioral plausibility (Gavetti, Levinthal, & Ocasio, 2007; Hodgkinson & Healey, 2008a), in this article we draw on the insights of recent advances in the social neurosciences, more specifically neuroeconomics (e.g., Brocas & Carrillo, 2008; Loewenstein, Rick, & Cohen, 2008) and social cognitive neuroscience (e.g., Lieberman, 2007; Ochsner & Lieberman, 2001), to demonstrate why the time has come for a fundamental rethink of the psychological foundations underpinning this body of work as a whole. Departing from the “cold cognition logic” currently prevailing, our alternative account of mental model and behavior change (explicated more fully in Hodgkinson & Healey, 2011b) conceives metacognition, emotion management and self-regulation as core dynamic managerial capabilities essential for meeting the behavioral challenges of radical innovation.

Our article is structured in five main sections, as follows. Following this introduction, the next section outlines in more detail the cold cognition logic currently prevailing as the central foundation for advancing understanding of and intervening in processes for fostering radical innovation and more effective responses to the behavioral challenges it poses. The third section summarizes more recent developments that challenge this foundation. Building on these insights, in the fourth section, we consider the implications for research and practice. The fifth and final section summarizes our main conclusions.

2. The psychological foundations of dynamic capabilities

Dynamic capabilities are at the core of organizational learning and innovation (see, e.g., Alvarez & Busenitz, 2001; Amit & Schoemaker, 1993; Gavetti, 2005; Kaplan, 2008; Teece et al., 1997; Tripsas & Gavetti, 2000). They are the mechanisms (“skills, processes, procedures, organizational structures, decision rules and disciplines”) that enable learning and innovation at the organizational level by first sensing opportunities and threats, seizing them and then transforming/reconfiguring the organization in the light of what has been learned via sensing and seizing (Teece, 2007). The economic, and to a lesser extent psychological, microfoundations of dynamic capabilities have received growing scholarly attention over recent years. Teece’s (2007) contribution constitutes the most comprehensive framework to date for the analysis of dynamic capabilities development in organizations. However, as demonstrated by Hodgkinson and Healey (2011b), behavioral plausibility is not its strength—the core psychological assumptions underpinning this framework (and other dynamic capability frameworks) need revising in the light of recent advances in social cognitive neuroscience and neuroeconomics.

Current dynamic capability conceptions, epitomized by Teece’s (2007) formulation, have been heavily influenced by the work of the late Herbert Simon and related developments in behavioral decision making, the overarching logic of which can be summarized as follows:

- Due to processing limitations reality is encoded in the form of a simplified representations (i.e. a schemas or mental models).
- These models act as a filter, screening out potentially important but weak signals.
- Hence, blind spots and inertia are likely to be endemic whenever new ideas and practices are introduced in organizations.

- The key to anticipating radical innovation and change, therefore, is in first understanding the cognitive limitations of decision makers and then designing tools and processes to overcome those limitations.

A growing body of theory and research amassed from the late 1980s onwards seemingly supports the foregoing assertions. For instance, work examining the evolution of competitive positioning strategies has demonstrated that, when sensing, strategists typically focus on a small subset of competitors (around 7 in number), located within one or two categories (e.g., Daniels, Johnson, & de Chernatony, 1994; De Chernatony, Daniels, & Johnson, 1993; Hodgkinson & Johnson, 1994; Porac et al., 1989). Furthermore, longitudinal (and anecdotal) evidence indicates that mental models of competition are highly resistant to change (Hodgkinson, 1997, 2005; Porac & Thomas, 1990; Reger & Palmer, 1996).

Drawing on the insights of self- and social-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; Turner & Oakes, 1986) and social identity theory (Tajfel & Turner, 1979, 1986), organizational behavior and strategic management researchers have argued that the desire for a positive self-concept will lead decision makers to evaluate information more favorably if it contributes to their personal sense of self (personal identity) and/or if it contributes to their group-based sense of self (social identity) (for overviews see Haslam, 2004; Haslam & Ellemers, 2005; Hodgkinson & Healey, 2008a, 2008b). Self/social categorization and identification make group decision making units highly cohesive and over identification with the (sub) group can lead to biased processing of strategically important information offered by “outgroup” members (Hodgkinson & Healey, 2008b; van Knippenberg, De Dreu, & Homan, 2004). Similar processes occur at the interorganizational level, leading to the formation of groups of firms or even entire industries following similar strategies (Lant & Baum, 1995; Porac et al., 1989). Groups of firms look inwardly and become impervious to the actions of rival firms beyond the “cognitive strategic group” (Peteraf & Shanley, 1997). Hence, over time strategists’ beliefs become highly convergent, leading firms to imitate one another’s competitive positioning strategies and what begin as highly lucrative niche positions rapidly become over populated (Abrahamson & Fombrun, 1994; Hodgkinson, 2005; Porac et al., 1989, 1995).

The tendency of interorganizational macrocultures to homogenize over time explains the all too frequent failure of entire industries to adapt to radically new competitors and technological innovations, clinging instead to outmoded practices and competitive positioning strategies (Hodgkinson & Healey, 2011a). Homogeneous macrocultures restrict the inventiveness of, and diffusion of radical innovations among, member organizations, thereby driving them toward collective inertia and increasing the similarity of their strategic profiles (Abrahamson & Fombrun, 1994).

According to Teece (2007), the primary behavioral barrier to effective seizing is the danger of organizational decision makers succumbing to basic cognitive biases of the sort highlighted in the classic heuristics and biases program of work stimulated by Kahneman, Tversky and colleagues (e.g., Kahneman & Tversky, 1979; Tversky & Kahneman, 1974, 1981). Evidence supporting the idea that organizational decision makers engaged in strategy formulation processes are indeed susceptible to such effects has been well documented over the years (see, e.g., Hodgkinson et al., 1999, 2002; Maule & Hodgkinson, 2002; Schwenk, 1984).

In a similar vein, the translation of strategy into action (i.e., transforming/reconfiguring) poses significant psychological challenges regarding the management of employees. Employees actively frame organizational events, objects and issues as they attempt to make sense of change, and their cognitive frameworks may or may not match those of the managers whose task is to explain the rationale of the organizational decision to its wider stakeholders. Hence, new ideas and practices, especially radically innovative ones that challenge the beliefs an individual holds about the organization’s identity, will be actively resisted (Haslam, Eggins, & Reynolds, 2003; Reger et al., 1994; Teece, 2007).

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