



Combining creativity and control: Understanding individual motivation in large-scale collaborative creativity

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A B S T R A C T

Recent research has shown that management control systems (MCS) can improve performance in contexts characterized by high levels of task uncertainty. This seems to conflict with a second stream of research, which argues that MCSs risk undermining the intrinsic motivation needed for effective performance in such settings. To solve this puzzle, we build on theories of perceived locus of causality and self-construal and develop an integrative model summarized in 15 propositions. To explicate our proposed solution and to show its robustness, we focus on the class of activities we call *large-scale collaborative creativity* (LSCC) – contexts where individuals face a dual challenge of demonstrating creativity and embracing the formal controls that coordinate their creative activities with others'. We argue that LSCC requires the simultaneous activation of intrinsic and identified forms of motivation, and simultaneously independent and interdependent self-construals. Against some scholarship that argues or assumes that such simultaneous combinations are infeasible, we argue that they can be fostered through appropriate attraction–selection–attrition policies and management control systems design. We also show how our propositions can enrich our understanding of motivation in other settings, where creativity and/or coordination demands are less pressing.

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Introduction

Recent management accounting literature has identified an important role for management control systems in highly uncertain situations and has documented the positive impact of management control systems on creative exploration and innovation activities in settings such as new product development and knowledge-intensive firms (e.g., Abernethy & Brownell, 1999; Ahrens & Chapman, 2004; Bisbe & Otley, 2004; Brown & Eisenhardt, 1997; Cardinal, 2001; Chapman, 1998; Davila, 2000; Davila, Foster, & Li, 2009; Ditillo, 2004). For example, Simons

(1995) develops a “levers of control” framework to address the question of how managers can combine innovation and control. Chapman (1998) uses four in-depth case studies conducted in the UK clothing and textile industry to show the beneficial role of accounting in highly uncertain conditions. Using a contingency approach, Davila (2000) shows how companies adapt their systems to the characteristics of different product development efforts. In a sample of 57 pharmaceutical firms, Cardinal (2001) finds that input, behavior, and output controls all enhance radical innovation. Ditillo (2004)'s case studies of three project teams in a large UK software firm document contribution of management controls to performance in software development. Indeed, recent theoretical and empirical research in management accounting and control represents a paradigm shift away from the traditional focus on established objectives and stable environments (Davila, Foster, & Oyon, 2009; Davila, Foster, & Li, 2009; Simons, 1995). The new

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paradigm highlights the role of management control systems in innovation and uncertain environments, envisioning formal management control systems as “flexible and dynamic frames adapting and evolving to the unpredictability of innovation, but stable to frame cognitive models, communication patterns, and actions” (Davila, Foster, & Li, 2009, p. 327).

However, another stream of research builds on an impressive body of work in psychology, especially studies of motivation and creativity, to argue that management control systems risk undermining the intrinsic motivation needed for effective performance of highly uncertain tasks. For example, Ouchi (1979) argues that in a research setting, strong forms of output or behavioral controls would not be as effective as “clan” controls, which rely on shared values to orient researchers’ behavior. Empirically, Amabile and her associates have conducted a series of studies in R&D labs and other innovation-intensive settings to highlight the importance of intrinsic motivation, freedom, and minimal formalized procedures and constraints (e.g., Amabile, 1998; Amabile & Gryskiewicz, 1987). Abernethy and Lillis (1995) find that flexible manufacturing firms rely more heavily on “spontaneous contact” and “integrative liaison devices” than traditional firms. In a research and development setting, Abernethy and Brownell (1997) find that when task uncertainty is high, personnel controls are more effective than accounting or behavioral controls in enhancing performance.

In the current state of management control systems research, we are therefore confronted with a puzzle: how can companies use management control systems effectively to support relatively uncertain and creative tasks if in doing so they risk undermining the required employee motivation? This puzzle is particularly important in the context of activities where individuals face a dual challenge of demonstrating creativity and embracing the formal controls that coordinate their creative activities with others’. We call such activity *large-scale collaborative creativity* (LSCC). Creativity is needed when tasks are uncertain; formal controls are needed when tasks are complex and interdependent. These two conditions are frequently found together in the demands facing employees involved in LSCC activities such as developing a new drug or designing a new generation car, airplane, or large-scale software system. The available theories of motivation for creativity have been developed primarily in the context of *individual* and *small-group creativity*. These theories highlight the critical role of intrinsic motivation, of values that honor individuals’ divergent thinking, and of the autonomy from organizational controls that is critical to the maintenance of such psychological orientations (Collins & Amabile, 1999). In LSCC tasks, however, informal coordination must be supplemented by formal management control systems because the number of contributors is too large and their creative contributions are too differentiated and too closely interdependent (Mintzberg, 1979). Therefore, contributors in LSCC must be motivated simultaneously to exercise individual creativity *and* to embrace formal management controls and values that honor conforming to organizational constraints and serving collective goals.

Existing theories of motivation make it difficult to understand how these dual demands of LSCC can be met. Indeed, in the opinion of some scholars, LSCC poses a real paradox (Chu, Kolodny, Maital, & Perlmutter, 2004; Gotsi, Andropoulos, Lewis, & Ingram, 2010; Lewis, 2000; Sitkin, Sutcliffe, & Schroeder, 1994; Zhou & George, 2003). The recommendations that flow from these theories of motivation are to partition the organization so that individuals can focus on one type of demand or the other (Lawrence & Lorsch, 1967; Tushman & O’Reilly, 1997). Nevertheless, a growing body of organization-level research challenges this skepticism and suggests that creativity and coordination can indeed be combined. Recent research on “contextual” ambidexterity (Gibson & Birkenshaw, 2004) suggests that organizations do not need to be partitioned to excel at both exploitation and exploration because individuals and teams within the same unit can master both challenges. Supporting this more optimistic view, recent management accounting research has drawn on concepts such as interactive control systems (Simons, 1995) and enabling bureaucracy (Adler & Borys, 1996) to highlight the potentially positive role of formal management control systems in creative tasks. The motivational underpinnings of such organizational designs remain, however, as yet unclear.

To resolve the dual-goal paradox, we bring together two clusters of concepts from the psychology literature: perceived locus of causality (PLOC) and self-construal. In the first step of our argument, we use the concept of PLOC to examine a range of *forms of motivation* arrayed along a spectrum from purely internal to purely external. Between these two ends of the spectrum lie two intermediate forms – introjection (motivation based on avoidance of guilt, shame or disapproval) and identification (motivation based on congruence with one’s values or goals) (Ryan & Connell, 1989). We consider all four forms’ effects on creativity and coordination. We highlight the connection between the intrinsic form of motivation and creativity, and between the identified form of motivation and coordination. We argue that LSCC requires simultaneously high levels of intrinsic and identified motivation, and we explain how this simultaneity is feasible.

Identification, however, has different effects on both creativity and coordination depending on whether the associated internalization has created an individual – a *subject of motivation* – whose self-construal is more independent or more interdependent, and whose values are correspondingly more individualistic or more collectivistic. In the second step of our argument, we argue that independent self-construals facilitate creativity and that interdependent self-construals facilitate coordination. We argue that LSCC requires that people experience as salient both independent and interdependent self-construals, and we explain how this simultaneity too is feasible.

The third step of our argument specifies the antecedent conditions required for the emergence of such a complex type of motivational orientation and suggests that these conditions can be attained through a combination of attraction–selection–attrition policies and management control systems design choices. The final step generalizes beyond LSCC settings to tasks with lower creativity and/or coordination demands.

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