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An Intentions-Based Model of Entrepreneurial Teams' Social Cognition*

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Research has identified crucial antecedents of corporate entrepreneurship. Research has also identified crucial antecedents of entrepreneurial thinking. This article uses lessons from social cognition to explicitly link these two issues. We adapt an intentions-based model of how to promote entrepreneurial thinking from its original domain of individual entrepreneurship and translate that model to the domain of corporate entrepreneurship. From our intentions-based model of the social cognition of entrepreneurial teams, we emphasize the importance of *perceptions* of desirability and feasibility and that these perceptions are from the *team* as well as the *individual* perspective. This leads to three propositions about entrepreneurial teams and an outline of the opportunities for future research.

INTRODUCTION

In a rapidly changing world, organizations need to continually identify new opportunities beyond existing competencies (Hamel & Prahalad, 1989; Mintzberg, 1994) if they are to survive. Therefore, organizations adopt what Covin and Slevin (1991) describe as an "entrepreneurial orientation," i.e., an orientation toward seeing (and acting on) opportunities regardless of existing resources (Stevenson & Jarillo, 1990). The resulting innovations provide a basis for economic profit (McGrath et al., 1996). Not surprisingly, corporate entrepreneurship scholars have tried to increase our understanding of what makes a firm entrepreneurial by investigating the corporate environment and its impact on corporate venturing. However, there has not yet been a theory-driven model that explicitly links our understanding of entrepreneurial thinking in this context.

While corporate entrepreneurship scholars have made a substantial contribution to our understanding of the corporate environmental factors that encourage an individual to be entrepreneurial, few studies have investigated the corporate environmental factors that encourage *teams* to be entrepreneurial. This is surprising for a number of reasons. First, recent research has concluded that teams are central to our understanding of what makes an organization entrepreneurial (e.g., Senge, 1990; Brown & Eisenhardt, 1995; Anderson & West, 1998). A team that is *entrepreneurial* is one that is focused on

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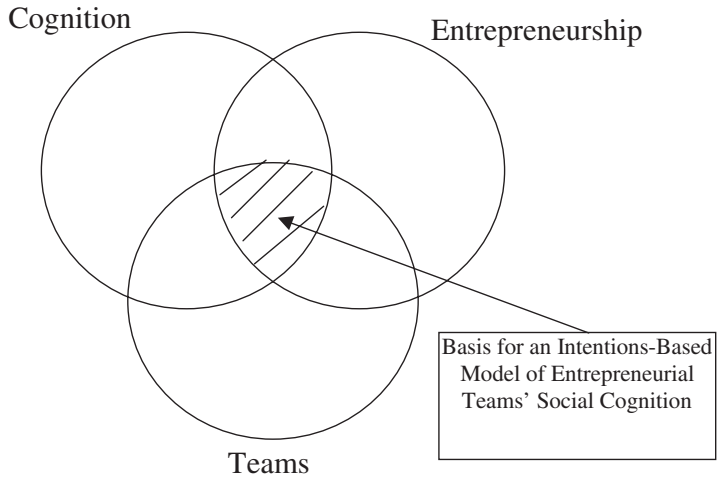
Figure 1

An Intentions-Based Perspective of Entrepreneurial Teams and Social Cognition: A Focus on the Intersection of Three Important Literatures



proactively and creatively seeking opportunities to bring into existence future goods and services (cf. Stewart's "team" [1989]). Second, as Jelinek and Litterer point out, understanding entrepreneurial activity at the organization level requires ". . . a cognitive paradigm which focuses on [both] individual sense-making *and collective decision processes*, and on the organizational context . . ." (1995, p. 137). This is particularly important because information processes in a group often differ from individuals' processes of sensemaking and enactment (cf. Weick, 1979). In particular, a mental model, such as a perceived opportunity held by a team need not reflect the models held by its members.

Given the importance of teams to entrepreneurial activity, and the inadequacy of addressing collective decisions by simply summing the cognitions of team members, it is important to offer a model of social cognition to the study of corporate entrepreneurship. In this article we develop such a model and in doing so make a number of contributions to the corporate entrepreneurship literature. In particular, we show that work in social cognition offers the researcher a way to link individual-level research to more collective settings, such as teams. The intentions-based cognitive model does adapt to collective settings, but requires insights from social cognition to do so.

This article focuses on the intersection of three research streams—cognition, entrepreneurship, and teams—as represented in Figure 1. We explore that aspect of cognition that occurs in teams with regard to entrepreneurship using an intentions-based lens. An intentions-based perspective is not the only lens from which the intersection can be viewed, and as illustrated in Figure 1, there are considerable bodies of literature that do not occur at the three-way intersection and therefore, will not be reviewed here.

The current article proceeds as follows. First, we investigate the intersection of entrepreneurship and cognition. Second, we investigate the intersection of teams and cognition. Third, we explore the three-way intersection of cognition, entrepreneurship, and teams using an intentions-based perspective and offer a model with some surprising implications. Using a different theoretical lens, or investigating the two-way intersections

Table 1

Critical Antecedents of Corporate Entrepreneurship

Study	Antecedents of Corporate Entrepreneurship
Zahra (1991)	Growth-oriented strategies, environmental scanning, formal communication, integrating venture activities, and clearly defined (supportive) organizational values
Kuratko et al. (1993)	Explicit goals, feedback/positive reinforcement, individual responsibility (trust, confidence), and results-based rewards
Kuratko & Hornsby (2001)	Appropriate rewards, explicit management support, resources available, supportive organization structure, and risk-acceptance
Stewart (1989)	Leadership, competitor pressure, organizational culture
Other (e.g., Jelinek & Litterer, 1995; Shane, 1994; Pinchot, 1985)	Develop skills/routines, championing, strong customer focus, and "Buy-in" across organization

of Figure 1, are also likely to advance the field. We therefore conclude with an extended discussion of where future research appears most fruitful.

ENTREPRENEURSHIP AND COGNITION

Table 1 details the findings of studies that are representative of research into corporate entrepreneurship. (Please see also Zahra, Jennings, & Kuratko [1999] for a broader review of corporate entrepreneurship). A common theme across these studies is that organizations differ to the extent to which they offer an environment that fosters entrepreneurial activity. Such "fostering" environments have been characterized by, for example, appropriate reward systems and top management support (e.g., Hornsby et al., 1993), explicit goals (e.g., Kuratko et al., 1993), and appropriate organizational values (e.g., Zahra, 1991), to name three widely recognized characteristics. These studies have primarily investigated outcomes to describe differences between more and less entrepreneurial firms. We believe there is a need for more research that focuses on processes to explain why entrepreneurial behaviors occur, and a focus on deeper cognitive processes is a step in the right direction.

Recently, corporate entrepreneurship scholars have begun to investigate the interplay of the corporate environment and the cognition processes of individual members within that organization, i.e., the environmental conditions that motivate the individuals within the organization to act entrepreneurially (e.g., Kuratko, Montagno, & Hornsby, 1990). The underlying assumption is that acting entrepreneurially is something that people choose to do and the top management of an organization can influence that choice by the corporate environment that they create. This is consistent with the view that perceiving and acting upon opportunities is based, at least in part, on intentional behavior (Dutton, 1993).[1]

1. Some entrepreneurial behavior, for example, the discovery of opportunities, can be argued to be unintentional although it still requires a motivated propensity activated by the promise of financial gain (Kirzner, 1979).

> . . . *Intentions* are assumed to capture the motivational factors that influence a behavior; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert in order to perform the behavior.
>
> As a general rule, the stronger the intention to engage in a behavior, the more likely should be its performance (Ajzen, 1991, p. 181).

While there have been a number of studies that have investigated the discovery of opportunities using an intentions-based perspective (e.g., Krueger's "cognitive infrastructure" model [2000]), none to the authors' knowledge have used the construct of intentions to provide insights into corporate entrepreneurship. Furthermore, although studies have highlighted the importance of entrepreneurial teams (e.g., Stewart, 1989; Katz, 1993), there has been insufficient research into the cognition of these entrepreneurial teams. We use an intentions-based perspective to develop a model of the social cognition of entrepreneurial teams. Before introducing our model, however, we highlight the importance of using a social cognition approach to investigate the intentions of entrepreneurial teams.

ENTREPRENEURIAL TEAMS AND SOCIAL COGNITION

Our focus on social cognition denotes an underlying assumption that teams develop supraindividual or collective mental models. Considerable research supports this assumption (Hayes & Allinson, 1998; Swieringa & Wierdsma, 1992; Whyte, 1998; Gibson, 1999; Feltz & Lirgg, 1998). Social cognition argues that teams are social artifacts of shared cognitive maps or enactments of a collective mind, rarely a simple combination of the cognition of individual members (Allaire & Firsirotu, 1984; Hayes & Allinson, 1988). March (1991) suggests that the learning of individual members of a team accumulates over time in a code of received truth, in other words, a *shared* mental model. Individuals modify a shared mental model but are also influenced (socialized) by this shared mental model. The approach used in the present article is consistent with the above beliefs.

The pursuit of cognition at the individual level may have limits in developing an understanding of the social cognition at the team level (Schneider & Angelmar, 1993; Simon, 1973; Weick, 1979). Social cognition (at least the definition used here) relates to the cognition by teams—how teams process information for their members through socially shared cognition (Moreland, Argote, & Krishnan, 1996). Such an approach is distinct from research that explores how individuals process information about themselves, the group, and its members (e.g., Judd, Ryan, & Park, 1991; Allison & Messick, 1985). While there is less known about socially shared cognition than we prefer (Moreland et al., 1996), there has been considerable recent scholarly interest (e.g., Hayes & Allinson, 1998; Whyte, 1998; Gibson, 1999; Feltz & Lirgg, 1998). We believe that a social cognition perspective can help us understand a team's intention to be entrepreneurial.

AN INTENTIONS-BASED MODEL OF ENTREPRENEURIAL TEAMS' SOCIAL COGNITION

Based on the relationships identified in the above discussion, we use a social cognition approach to investigate an intentions-based model at the team level of analysis. Intentions-based models have been successful in investigating the cognition of individuals and their resultant behavior (Ajzen, 1987; Kim & Hunter, 1993). We define a team's entrepreneurial intention as the motivational attitudes to bring into existence future goods and services. The intention to be entrepreneurial must be combined with nonmotivational

factors, such as necessary resources, in order for the intention to generate entrepreneurial activity (Ajzen [1985] discusses nonmotivational factors). In particular, Ajzen's "theory of planned behavior" posits that intentions toward a given target behavior will depend on perceptions: the perception that the course of action is within one's competence and control (thus feasible) and is personally desirable.

Teams' Perceptions of Feasibility and Entrepreneurial Intentions

For entrepreneurial intention to be high, the team must perceive this course of action as feasible, i.e., it can actually be implemented. The perception of feasibility reflects actual financial resources and human skills only to the degree that the team perceives their contributions to successful performance. Thus, the perception of feasibility has much to do with beliefs about efficacy at the individual level *and*, we argue, at the group level. Efficacy is discussed first at the individual level of analysis (self-efficacy) and then at the team level (collective efficacy).

Self-Efficacy. Research into the phenomenon of self-efficacy suggests that people who believe they have the capacity to perform (high self-efficacy) will perform (Bandura, 1991; Eden & Aviram, 1993; Gist, 1987; Gist & Mitchell, 1992; Waung, 1995). Self-efficacy refers to the conviction that one can successfully execute the behavior required (Bandura, 1977, p. 193). Thus, it reflects the perception of a personal capability to do a particular job or set of tasks. High self-efficacy leads to increased initiative and persistence and thus improved performance; low self-efficacy reduces effort and thus performance. Indeed, people with high self-efficacy think differently and behave differently than people with low self-efficacy (Bandura, 1986, 1995; Eden, 1992). It appears that self-efficacy affects the person's choice of action and the amount of effort exerted (e.g., Waung, 1995). Bandura (1991) proposes that self-efficacy judgments are influenced by enactive mastery experiences, vicarious experiences, verbal persuasion, and physiological arousal. Entrepreneurship scholars have found that self-efficacy is positively associated with the creation of a new independent organization (Krueger & Brazeal, 1994).

Collective Efficacy. If fellow team members are needed to support an intention (such as for entrepreneurial behaviors), perceptions of collective efficacy are likely to also be important (Bandura 1986, 1995). Collective efficacy refers to a team's belief in their conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments (Bandura, 1997, p. 477). In short, it is a collective belief that the team can be effective (Gist, 1987; Shea & Guzzo, 1987b; Lindsley, Brass, & Thomas, 1995). While research on collective efficacy has chosen different ways to measure it, collective efficacy is conceptually distinct from the aggregation of the self-efficacy of each member of the team (Lee, 1992; Little & Madigan, 1997; Silver & Bufanio, 1996; Feltz & Lirgg, 1998), since it is a team level attribute (Bandura, 1997). For example, each member of the team may have relatively low self-efficacy yet the team has a high collective efficacy towards entrepreneurship (see Feltz & Lirgg [1998] for an example of the independence of self-efficacy and collective efficacy).

> Theoretically, it seems like group efficacy is distinct from the individual beliefs group members hold about themselves or their group, because group efficacy arises through group interaction and the process of collective cognition. That is, group efficacy forms as group members collectively acquire, store, manipulate and exchange information about each other and about their task, context, process and prior performance. Through processes of interaction, this information is combined, weighted, and inte-

grated to form group efficacy. These same collective processes do not occur during self-efficacy formation or when members form individual beliefs about their group (Gibson, 1999, p. 138).

Research on collective efficacy is less well developed than on self-efficacy but is nonetheless telling in this domain. Teams with high collective efficacy should perceive their team as effective, choosing more challenging goals (Whitney, 1994), expending more effort, and persisting longer in the face of adversity (Cannon-Bowers, Tannenbaum, Salas, & Volpe, 1995; Hodges & Carron, 1992). Collective efficacy appears to affect a team's ability to visualize success, attributions made to the team (especially positive outcomes), and attributions made to the environment (especially negative outcomes) (Little & Madigan, 1997). Several studies have demonstrated a link between collective efficacy and team performance (e.g., Earley, 1993; Hodges & Carron, 1992; Little & Madigan, 1994; Prussia & Kinicki, 1996). Successful performance provides positive outcome feedback, which in turn strengthens the initial judgment of collective efficacy. The reverse is the case for a team with low efficacy that spirals to lower performance and lower efficacy (Silver & Bufanio, 1996). As with self-efficacy, it often becomes a self-fulfilling prophecy. It is important to note that collective efficacy is thought to be just as context specific as self-efficacy (Guzzo et al., 1993; Bandura, 1986). That is, a team might have high collective efficacy toward searching for opportunities to extend their current product line, yet have low collective efficacy toward the discovery of more radical opportunities. Thus, any measure of collective efficacy must also be context specific.

As demonstrated in the literature review, summarized in Table 1, corporate entrepreneurship studies have focused on aspects of actual competence (e.g., providing specific goals and appropriate reward structures [Kuratko et al., 1993] and formal environmental scanning [Zahra, 1991]). From our intentions-based model of the social cognition of entrepreneurial teams, we emphasize the importance of *perceptions* of feasibility (subjective rather than objective) and that these perceptions are from the team (collective efficacy). Thus,

Proposition 1: The higher the perceived feasibility of a team's entrepreneurial abilities, the greater that team's entrepreneurial intention. Perceived feasibility of entrepreneurial behavior is higher when the team's collective efficacy toward entrepreneurial behaviors is higher.

Following the above proposition, an investigation of those activities that best enhance collective efficacy for entrepreneurial behaviors provides a basis for a deeper understanding of a team's entrepreneurial intention. We begin with an adaptation of Bandura's (1995) work at the individual level of analysis, and investigate, at the team level of analysis, the impact of various types of experience and learning on a team's entrepreneurial collective efficacy. Enactive mastery, i.e., a team's positive previous experience with a task, is likely to increase perceptions that successfully completing such tasks is feasible. For example, those with an initial success at entrepreneurship will expect to succeed again and therefore will have higher collective efficacy than those teams that were unsuccessful in initial attempts who will expect to be unsuccessful again. Therefore, initial experiences for a team are vitally important since they could represent the start of a self-fulfilling prophecy—the team succeeds; the team thinks it will succeed again; because the team thinks it will succeed again means it will have a higher probability of succeeding, and the process continues. Weick (1979) suggests a strategy of "small wins" wherein organizations can provide opportunities for teams to attempt innovative things at relatively low risk (i.e., trying and failing is not career threatening). Providing such

experiences that demonstrate mastery (in even a limited domain) can increase efficacy perceptions, so long as the team perceives their mastery as generalizable. This, of course, requires that the team perceives salient and credible cues that the skills are transferable to newer, larger domains. Jelinek and Litterer (1995) argue that entrepreneurial organizations offer exactly such cues.

We know that human judgment is also shaped by the feedback arising from the abovementioned experiences. Feedback involves an environment that returns some measure of the outputs of a system back to the system, which produced that output. The feedback then allows the system to compare its present state with an ideal state, to adjust itself in light of that comparison and bring itself closer to that ideal state (Doherty & Balzer, 1988, p. 163). We propose that feedback has an important impact on the team's collective efficacy. For example, Krueger and Dickson (1994) found that performance feedback on situation-specific–decision-making tasks significantly changed self-efficacy, which, in turn led to higher perceptions of opportunity. While there may be questions about the generalizability of these results from self-efficacy to collective efficacy, we suggest that conceptually the argument is useful. Karl, O'Leary, and Martocchio (1993) suggest that feedback in the form of positive reinforcement may have a positive impact on collective efficacy.

Training represents a formal process of providing/obtaining feedback. Good training will provide important skills that teams require to be entrepreneurial, which in turn may increase the team's collective efficacy. For example, training in self-management increased self-efficacy (Frayne & Latham, 1987). Training that incorporates techniques to increase self-efficacy has been found to lead to increased performance (Earley, 1994; Eden & Aviram, 1993; Gist, 1987; Gist, Stevens, & Bavetta, 1991; Waung, 1995). We propose that these findings about the relationship between training and self-efficacy are generalizable to training a team to enhance its collective efficacy toward entrepreneurial behaviors. It is important to note that as collective efficacy is task specific, so should the training, i.e., training in tools that assist in developing collective efficacy for entrepreneurial behaviors.

Enhanced perceptions of task feasibility can also arise from observing the experiences of others. Vicarious experience refers to a team observing another, comparable team that is able to conduct entrepreneurial behaviors successfully. Often, this takes the form of behavioral modeling, where the observation is planned and managed to enhance the experience and increase the likelihood that the team will internalize the lesson. Increasing the visibility of what is truly feasible is central to benchmarking, but it also increases the credibility of what is feasible: "If a competent team within the organization (or even outside the organization) can do this, so can we." Thus,

> **Proposition 2:** A team's collective efficacy toward entrepreneurial behaviors is higher when it has more entrepreneurial experiences. Entrepreneurial experiences are enhanced by enactive mastery, feedback, training, and vicariously learning from the experiences of others.

Teams' Perceptions of Desirability and Entrepreneurial Intentions

Not only must the team perceive entrepreneurial behaviors as feasible for entrepreneurial intention to be high, the team must also perceive this course of action as desirable. Perceived desirability refers to the team's attitude toward entrepreneurial behavior—the degree to which the team has a favorable or unfavorable evaluation of the potential entrepreneurial outcomes. In the Fishbein-Ajzen framework (1975), personal

attitude depends on perceptions of the consequences of outcomes from performing the target behavior, in short, an expectancy framework. However, the model also argues that these perceptions are learned. Creative actions are not likely to emerge unless they produce personal rewards that are perceived as relatively more desirable than more familiar behaviors (Ford & Gioia, 1995).

Gerhart and Milkovich (1992) offer the notion of "compensation bundles," which comprise a mix of positive, negative, and neutral consequences that result from a behavior. Increasing perceived desirability requires that the team perceives (on balance) as desirable the compensation bundles provided by a supportive culture for its entrepreneurial activity. Perception remains important, i.e., objectively supportive reward systems need not be perceived as desirable by the team. For example, an objectively supportive extrinsic reward (money for entrepreneurial outcomes) can even sometimes interfere with intrinsic motivation (for individuals see Amabile, 1997) or formal reward systems are overridden by informal punishments. As such, we should view the set of rewards (and punishments), both intrinsic and extrinsic, both formal and informal, in terms of a compensation bundle. From our social cognition perspective we argue that it is a team's perception of its compensation bundle that determines the desirability of entrepreneurial behaviors. Thus,

> **Proposition 3:** The higher the perceived desirability of a team's entrepreneurial behaviors (e.g., the team's compensation bundle is perceived as more rewarding of entrepreneurial behaviors), the greater that team's entrepreneurial intention.

Previous Research and Our Intentions-Based Perspective of Entrepreneurial Teams

Table 1 earlier demonstrates that there is some consensus about the important antecedents of corporate entrepreneurship. Consider Table 2 below. Here we have taken the key antecedents from Table 1 and analyzed them in light of the social cognition–based intentions perspective. If there is any reason to believe that the intentions perspective has merit in explaining and predicting entrepreneurial thinking, then we now have a theoretical basis to guide us as we explore the "black box." We now explore further the final category and its four antecedents—develop skills/routines, championing, strong customer focus, and "buy-in" across the organization—from our intentions-based model of an entrepreneurial team's social cognition.

Customer Focus. At the interface of marketing and entrepreneurship, there is a long-running interest about the relationship between entrepreneurial orientation and marketing orientation (Miles & Arnold, 1991) with some evidence that if they are not interrelated, then successful entrepreneurs need some degree of both orientations. Why might a strong marketing orientation translate into a stronger entrepreneurial orientation? The decision-making literature (as early as Lord Keynes) points out how even the illusion of more knowledge in a situation lowers the perception of risk. A team's greater understanding of prospective customers may be invaluable in and of itself, but in terms of this model, knowledge likely increases a team's confidence in assessing the value of possible opportunities. Thus, even if this customer focus does not increase the team's perceived magnitude of an opportunity's desirability, it should reduce the inevitable uncertainty associated with a novel situation, thus increasing the perceived desirability of that opportunity.

Table 2

Possible Impact of Key Antecedents on Cognitive Infrastructure

Study	Antecedent	Possible Impact on Cognitive Infrastructure
Zahra (1991)	Growth-oriented strategies	Sends signal that entrepreneurship is desirable and that at least management believes it to be feasible.
	Environmental scanning	If the team is good at environmental scanning then this could build its collective efficacy. It might also provide information on the desirability of entrepreneurship.
	Formal communication	Depends on the content of the communication. It could send credible cues to the team that entrepreneurship is desirable.
	Norms (see also Stewart, 1989)	They might indicate to the team that entrepreneurship is desirable. Other norms, such as punishing failure, could have the opposite effect.
	Integrating venture activities	If perceived as useful by the team it could increase its collective efficacy.
	Clearly defined supportive values	Increase team's perception of the desirability of entrepreneurship.
Kuratko et al. (1993)	Explicit goals	Increase team's perception of the desirability of entrepreneurship.
	Feedback/Positive Reinforcement	Signal the desirability of team entrepreneurship. It could also help build a team's collective efficacy.
	Individual responsibility	Ensures that cues from management are seen as credible and builds collective efficacy.
	Results-based rewards	If entrepreneurship is perceived as highly likely then results-based rewards will increase the perceived desirability of entrepreneurship. But given the uncertainty of entrepreneurship then this reward structure may dissuade entrepreneurship.
Kuratko & Hornsby (2001)	Appropriate rewards	Could increase perceived desirability of entrepreneurship and used as feedback to build collective efficacy.
	Explicit support by management (also Stewart)	Demonstrates that entrepreneurship is desirable and if resources are part of this support then it likely increases the team's perceived collective efficacy.
	Supportive structure	Could increase both perceptions of desirability and feasibility.
Stewart (1989)	Organization culture	Would reinforce perceptions of supportive social norms.
	Risk-acceptance	Reduces fear over uncertain outcomes and therefore increases the team's perception of desirability.
Others	Build skills/routines	If perceived as useful for entrepreneurship will build efficacy.
	Championing	Sends explicit cues on the desirability of entrepreneurship and if perceived by the team to provide additional resources then increases collective efficacy.
	Strong customer focus	If perceived that this provides information useful for entrepreneurship then this could increase efficacy.
	"Buy-in" across organization	Could increase both perceptions of desirability and feasibility.

"Buy In." Among others, Jelinek and Litterer (1995) argue persuasively that an organization that is truly entrepreneurial is characterized by the visible "buy in" of its members. (They also argue that intrapreneurs should proactively seek "buy in" from key people in the organization.) That is, even those organization members and subgroups that are not directly involved with innovative activity will visibly support those who are. In terms of this model the stronger the perception of organization-wide "buy-in," the more likely there will be a pervasive sense that social norms are supporting opportunity seeking by the team (Kuratko, Montagno, & Hornsby, 1990; Pinchot, 1985). Further, if the buy-in is genuine across members of the team, there would likely be an enhanced sense of collective efficacy and therefore, a greater entrepreneurial intention.

Champions. One visible sign of organizational support for entrepreneurial activity is the notion of "champions" (Pinchot, 1985; Shane, 1994). Champions tend to serve two key functions. First, they can provide psychological support (e.g., encouragement) to nascent and latent corporate entrepreneurs. Second, they can provide tangible support in terms of marshalling resources to assist the novice corporate entrepreneur. The former suggests that the presence of champions again enhances entrepreneurial intentions by enhancing the perception of supportive social norms (and perhaps by reinforcing perceptions of personal desirability). The latter function suggests champions increase perceptions of collective efficacy as the champion-marshalled resources provide positive performance cues. Moreover, champions often serve an informative function, e.g., teaching the "ropes" to prospective entrepreneurial teams, giving them a roadmap of how to use what the organization has available to support their entrepreneurial activities.

Routines. Every organization has its routines (and standard operating procedures) that guide sensemaking (Weick, 1979). Corporate entrepreneurship is enhanced in those organizations where even the more quotidian routines are supportive of entrepreneurial activity (Pinchot, 1985). Certainly we can argue that where "business as usual" activities are unfriendly to new initiatives, new ventures will likely be perceived as less legitimate; thus, social norms will be perceived as less supportive. However, routines that reinforce a sense that entrepreneurial activity *is* "business as usual" likely increase the perceived collective efficacy of entrepreneurial teams and thus their entrepreneurial intentions.

Skills. The mere acquisition of a skill need not translate into perceptions of self-efficacy, let alone actual efficacy (Bandura 1986, 1997). However, another function that champions and mentors can serve is to persuade prospective entrepreneurial teams that their skills will indeed translate into success in the new venture. Moreover, it is not necessarily enough to raise collective efficacy at specific tasks needed for that venture. Champions (and mentors) can help the entrepreneur identify the critical skills (and knowledge) needed, again enhancing collective efficacy at a broader level. Knowing they have the proper skill set should raise the entrepreneurial team's sense of efficacy at launching a corporate venture.

DISCUSSION AND CONCLUSION

A significant and growing focus in the study of entrepreneurship is the effort to gain a better understanding of the genesis of entrepreneurial thinking. Nowhere should that be more evident than in corporate entrepreneurship (Hornsby et al., 1993; Kuratko et al., 1993; Brazeal & Herbert, 1999). To nurture an organization where entrepreneurial thinking is the norm may be invaluable but requires much greater attention to both the tangible infrastructure and the cognitive infrastructure that nurture and support entrepreneurial thinking.

However, we have learned from studying corporate entrepreneurship that it is not necessarily about the individual entrepreneur inside the organization; it is much more about building an organization that behaves entrepreneurially (Jelinek & Litterer, 1995; Brazeal & Herbert, 1999). We need to be careful about anthropomorphizing an organization, as organizations do not "think" *per se*. Yet, groups of individuals often think and behave differently than might be expected from simply aggregating what each individual thinks; hence, the importance of a social cognition perspective.

We have attempted here to take the insights from the past work on how to successfully nurture and support entrepreneurial thinking in individuals (Shapero, 1982; Krueger & Brazeal 1994; Brazeal & Herbert, 1999; Krueger, 2000) and adapt those insights at the group level. Insights from the rich, broad social cognition literature give us several new insights about how to develop an entrepreneurship-friendly "cognitive infrastructure" at the collective level. For example, Bandura (1986, 1995) has long argued that there is also a perceived collective efficacy to complement his widely used construct of perceived self-efficacy. However, it has been challenging to identify appropriate measures of collective efficacy, let alone understand the role of collective efficacy in promoting the perception of opportunity. As discussed above, social cognition research offers considerable direction.

Still, how does this social cognition perspective serve to help our understanding of the entrepreneurial organization? Much of the literature on corporate entrepreneurship has focused on the antecedents, correlates, and consequences of intrapreneurial activity. Relatively few of these studies have sought to pry open the "black box" to gain a deeper understanding of why these antecedents enhance an organization's entrepreneurship.[2] Our model presented in this article provides an opportunity to understand why.

We now have an opportunity to better understand the known antecedents of intrapreneurial activity by analyzing the process(es) by which their impact is realized. Consider the diagnostic value of this approach. What if an organization finds that champions are not encouraging entrepreneurial activity? This could be because the champion is not impacting perceptions of desirability and/or feasibility. For example, Carsrud et al. (1993) found that at the individual level, role models and mentors only influence entrepreneurial behavior if they significantly influence a critical attitude, such as self-efficacy. We agree with Carsrud et al.'s (1993) finding but add the proviso that champions that influence a team's collective efficacy may enhance entrepreneurship even if they have no impact on self-efficacy.

Therefore, we can now take a much more fine-grained look at how antecedents impact the level of corporate entrepreneurship. It might be that an antecedent has no impact at the individual level but is perceived as highly important by the team, and/or an antecedent might enhance perceptions of feasibility but diminish perceptions of desirability. We can also focus on the components of the model in light of testable implications (e.g., the role of compensation bundles and their utility in understanding team-level perceptions of desirability). There are a number of such implications from our model for scholars of corporate entrepreneurship and also opportunities for further theoretical development and empirical testing that will make an important contribution to the literature. Specifically, the following section discusses more specific future research into the perceived desirability and feasibility of entrepreneurial teams, other elements of the model, and other research issues such as measurement.

Future Research

Research into opportunity recognition has begun to move from descriptive studies to deeper, richer studies into the "how" and "why"—applying strong theoretical bases to explain the descriptive findings. This article offers another step in understanding how

2. The work of Brazeal, Herbert, Jelinek, Kuratko, and Zahra have been the most helpful, as they insist on investigating how organizations can nurture entrepreneurial thinking.

viable opportunities are recognized (in this case, by teams within organizations) and we anticipate that our colleagues will identify additional opportunities to enrich our understanding of entrepreneurial thinking and how to nurture it.

Conceptual Issues. Figure 1 depicts how this analysis operates at the intersection of multiple literatures. While this has proven fruitful, reviewers and others have continuously noted the many other angles we could explore in research on innovation, on entrepreneurship, on cognition and social cognition, and on teams. We look forward to research that tests this model's applicability to these different aspects of those important domains. For one example, there is much in the vast research on teams and innovation that suggest subtle (and not so subtle) nuances that research might explore (e.g., nascent versus long-established teams; diverse versus homogeneous teams; radical versus incremental innovation, and so forth). Similarly, there are aspects of the social cognition literature (e.g., the seminal work of Fiske & Taylor) that could be further explored, both conceptually and empirically, as we strive to better understand how a more entrepreneurial mindset actually operates to encourage opportunity seeking.

Empirical Testing and Measurement Issues. If our propositions are supported, then research that extends current work on characteristics of the environment that motivate individuals to those that motivate teams will make a substantial contribution to the corporate entrepreneurship literature. This requires empirical testing that introduces a number of challenges. Let us illustrate with collective efficacy. Questions remain about how the team differs from the sum of its members; these questions are even thornier when we look at cognitive phenomena. For example, collective efficacy remains under-researched, despite the success of studies that provide evidence of its importance (Lindsley, Brass, & Thomas, 1995; Parker, 1993). Let us consider the appropriate measurement of collective efficacy. The collective efficacy literature offers more than one approach; finding the optimal approach for studying entrepreneurship should be worth our efforts.

One approach assumes that collective cognition is the sum of the parts (the individuals). Unfortunately, as argued in this article this is sometimes *not* the case due to social dynamics (Feltz & Lirgg, 1998; Whyte, 1998). An alternative approach is to use global measures of collective cognition. This may involve analysis of, for example, a spokesperson reporting on collective cognition (e.g., Namenwirth, Miller, & Weber, 1981). Or one might analyze other reports that are the outcome of team cognition (e.g., annual reports [Bettman & Weitz, 1983] or internal reports and minutes of meetings [e.g., Bartunek, 1984], or the investigation of team performance in cognitive tasks [e.g., Hill, 1982]). Alternatively, each individual can respond on behalf of the team and then the average score across individuals would represent collective efficacy (e.g., Earley, 1993), or collective efficacy might be measured by asking the team to give a consensus response to a self-efficacy instrument (e.g., Gibson, 1999).

We propose that the average score of the individuals responding on behalf of the team is the most appropriate measure of team (social) cognition. Bandura (1997, p. 479) himself proposes that "a group belief is best characterized by a representative value for the beliefs of its members and the degree of variability or consensus around that belief." Again, this merits rigorous testing. Regardless, the intentions of entrepreneurial teams remain an ideal domain in which to wrestle with such issues.

Given the importance of perceptions of desirability and feasibility in determining a team's entrepreneurial intention, future research could investigate the impact of various levels of objective factors on these perceptions. For example, conjoint analysis could be used to investigate which aspects of a compensation bundle are most salient to the

perception of desirability for a team. A conjoint experiment could be constructed such that a team (or members of the team responding on behalf of the team) assesses the desirability of a number of compensation bundles where each compensation bundle has the same factors but differs on the combination of the levels of those factors. This provides the opportunity for the research to infer whether an objective compensation factor impacts perceptions of desirability for the team, plus the relative impact from each of the various factors. (A longitudinal design that elucidates how changes in these critical attitudes change intent would offer additional insights.) We should also seize the opportunity to employ different methodologies that offer perhaps different insights into these phenomena such as multiattribute utility scaling to capture both individual and collective perceptions; or we might adapt social network software to exploit a graph theoretic approach.[3] Sound empirical studies will be of practical benefit to organizations attempting to increase teams' entrepreneurial intention. For example, the conjoint study noted above allows organizations to optimize the perceptions of desirability and the cost of the objective compensation factors.

Indirect Impact on Entrepreneurial Intentions. Researchers argue that exogenous factors influence intentions (and behavior) only indirectly by influencing desirability and/or feasibility. For example, the presence of role models may or may not increase entrepreneurial behavior, depending on whether the role models increased the team's perception of the desirability or feasibility of discovering and exploiting opportunities. (See Krueger and Brazeal [1994] and Krueger [2000] for a more detailed discussion at the individual level of analysis.) Exogenous factors thus make an impact only if they influence the team's perceptions.

It would be highly fruitful for scholars to test other demonstrated variables that are believed to foster corporate entrepreneurship to see if those variables affect perceptions of desirability or perceptions of feasibility, i.e., whether the relationship between established variables in the literature and entrepreneurial outcomes are mediated by perceptions of desirability and/or feasibility. For example, cohesive teams seem better at generating innovation. Does the cohesion increase perceptions of collective efficacy or increase the perception that social norms are supportive—or both? Do cross-functional teams (Senge, 1990) increase collective efficacy? Furthermore, we have a substantial literature that suggests a variety of organizational characteristics that contribute to corporate entrepreneurship. For example, does a flat organizational structure affect teams' perceptions of desirability? Of feasibility? Similarly, we can test the impact of personal characteristics that seem to enhance corporate entrepreneurship. For example, if team members are personally entrepreneurial, does that influence the team's perceptions of feasibility or of desirability of entrepreneurial activities?

Beyond Intentions. We used an "intentions" lens to explore the three-way intersection of cognition, entrepreneurship, and teams (illustrated in Figure 1). This is not the only perspective that could be used to explore the intersection and provide important insights. For example, those focused on performance outcomes are likely to be more concerned with the degree to which an entrepreneurial team's perceptions match "reality," i.e., use some measure of accuracy. Others might point out that intent means little, if it does not translate into action. While there is a strong correlation between intentions and behavior (e.g., Kim & Hunter, 1993), exogenous factors can precipitate, facilitate, or inhibit that

3. We are indebted to Kelly Shaver and Saras Sarasvathy respectively for these two suggestions.

relationship. For example, consider Triandis's (1967) perceptions of resource availability and Shapero's (1982) propensity to act. If decision-makers believe that the tangible resources needed are unavailable, intent is unlikely to become action. What catalysts serve to crystallize beliefs and attitudes into a salient intention to be entrepreneurial or to impede it? Does Shapero's propensity to act (1982) help attitudes coalesce into intentions or facilitate the realization of intentions? Is there a propensity to act that operates at the team level?

Scholars of heuristics and biases could investigate the information processing by entrepreneurial teams and compare those shared mental models with the mental models of each individual member of the team, or at least the outcomes of this information processing. For example, does the team's shared mental model provide a more effective heuristic than does each individual's mental model? Does the shared mental model of an entrepreneurial team lead to more biases, less biases, or different types of biases?

An Intentions-based perspective is one of a number of lenses that could be used. We encourage others to utilize a different lens to explore, what we argue, is an important intersection of cognition, entrepreneurship, and teams. In doing so, there is the opportunity to inform research at the two-way interactions and the three bodies of literature. This is not to suggest that there is not important work still to be done at the two-way intersections. This special issue focuses on the intersection of cognition and entrepreneurship. We have added teams. There is also an opportunity for entrepreneurship scholars to further explore the intersection of teams and entrepreneurship. There is already a considerable body of literature on, for example, innovative teams that would likely be highly informative. For example, this model offers some insights about what might be unique about teams that are entrepreneurial; however, as we mention at the start of this section, we look forward to research that is enriched by further insights from research into teams.

Conclusion

Given the importance of teams to entrepreneurial activity, and the inadequacy of addressing collective decisions by simply summing the cognitions of team members, we offer an intentions-based model of an entrepreneurial team's social cognition to investigate corporate entrepreneurship. From this model we emphasize the importance of *perceptions* of desirability and feasibility (subjective rather than objective) and that these perceptions are from the *team* as well as the *individual* perspective. This leads to a number of propositions about entrepreneurial teams and provides the opportunity to gain a deeper understanding of why known antecedents impact the level of entrepreneurship. We hope that we have highlighted an important "area" for investigation, provided some insight through our approach, and encouraged others to use different perspectives to further advance our understanding of the phenomenon at the intersection of cognition, entrepreneurship, and teams.

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