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IMAGINING NEW VENTURE IDEAS: DEVELOPMENT AND VALIDATION OF THE IMAGINATIVENESS SCALE



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ABSTRACT

Imagination is at the core of entrepreneurship most notably during the process of ideation. Many ideational approaches acknowledge the importance of imagination, but typically ascribe the ability to all individuals as though it does not vary in degree or type. We question this implicit assumption using a creative problem solving lens to identify three different imaginative skills, referred to as creative, social, and practical imaginativeness. Each skill combines the ability of imagination with the knowledge needed to simulate various task-related scenarios used in generating and selecting new venture ideas. After justifying the theoretical existence of these imaginativeness skills, we validate a scale of creative, social, and practical imaginativeness to establish a foundation for empirical testing of the antecedents, consequences, and correlates of imaginativeness. We then examine the efficacy of the three forms of imaginativeness on new venture ideation.

INTRODUCTION

The creation of new ventures is a process by which “entrepreneurs come to imagine the opportunity for novel ventures” (Cornelissen & Clarke, 2010, p. 539). They use their imaginations to create new ideas (Chiles et al., 2010) that entrepreneurial action either proves to be opportunities for new ventures (Davidsson, 2015; Dimov, 2011; Vogel, 2016) or reveals to be mistaken beliefs (Shepherd et al., 2012). Because “all great ventures begin with imagination” (Seelig, 2015, p. 56) and opportunities are “ultimately determined through creative imagination and social skill of the entrepreneur” (Suddaby et al., 2015, p. 3), imagination is critical to new venture ideation.

Despite its espoused importance to entrepreneurial action, imagination is rarely defined, much less examined or measured by entrepreneurship scholars. Such neglect is also true of creative problem solving researchers who have long sought to explain the creativity behind ideation as a function of attitude, knowledge, evaluation, and imagination (Isaksen et al., 2011). In these models, attitude refers primarily to motivation and manifests as effort, knowledge is embodied by general human capital, and evaluation often refers to the judgment informed by experience. Though imagination is commonly recognized as the final pillar, the creativity literature typically conceptualizes it as an ability or mindset frequently manipulated but never measured.

In this study, we examine imagination’s role in new venture ideation through a creative problem-solving lens and use of a quasi-experimental design. We had 506 individuals from the general working population with varying entrepreneurial experience and randomly distributed across the United States, (1) generate as many new venture ideas as possible based on a description and diagram of new technology, and (2) select their best idea and write a short description of that idea. In addition, we directly measured their motivation, knowledge, and experience, and indirectly measured their imagination via imaginativeness – a cognitive skill that combines the ability of imagination with the knowledge needed to simulate various task-related scenarios. To do so, we developed a measure of three forms of imaginativeness used in new venture ideation – creative, social, and practical – and demonstrated the scale’s predictive validity for idea generation and

selection (Perry-Smith & Mannucci, 2017) over and above the effects of motivation, knowledge, and experience. Thus, our findings show (1) that imaginativeness is measurable, (2) that its three forms vary within and across individuals, (3) that these three forms of imaginativeness predict idea generation and idea selection differently, (4) and that they do so over and above the other more commonly examined predictors of ideation.

HYPOTHESES DEVELOPMENT

Imaginativeness

Imagination is “the ability to make mental images of things that may not exist in real life” (Collins, 2006), making it a latent construct, unobservable, and unmeasurable. We argue that when this cognitive ability is mixed with the knowledge needed to simulate various task-related scenarios involving innovation, persuasion, and administration it becomes the cognitive skill of imaginativeness that taps into the creative potential needed to effectively generate and select new venture ideas. Imaginativeness, we propose, is the catalytic element that makes new connections and combinations possible. Review of existing literature reveals that this cognitive skill manifests in three different forms when applied to the ideation process: (1) creative imaginativeness, (2) social imaginativeness, (3) and practical imaginativeness. First, imaginativeness is applied in the creative sense to envision what could be. This form of imaginativeness is used for creativity (LeBoutillier & Marks, 2003), innovation (Liedtka, 2014; Van Den Ende et al., 2014), new product development (Dahl et al., 1999, 2001), or idea production (De Bono, 1992). Second, imaginativeness is applied in the social sense to interpret and make sense of what is occurring or could occur. For example, when perceiving a social situation, people cannot directly observe motives; instead, they use their imaginativeness to make inferences about others’ beliefs, desires, or intent when they are ascribing meaning to their behavior. This subject occupies center stage in the theory of mind literature (Bagozzi et al., 2013; Frith & Frith, 2006, 2008), which examines how people use their imagination to make social inferences about other people’s mental states. Third, imaginativeness is applied in the practical sense to predict, project, or forecast what will likely be in the future. This is the form of imaginativeness that many associate with choice and reason (Johnson, 1987; Shackle, 1979).

Creative Imaginativeness and New Venture Idea Generation

Creative imaginativeness specifically supports new venture idea generation by allowing individuals to generate alternatives to a given problem. The generation of alternatives is about “generating possible solutions appropriate to the particular problematic situation and to do it in such a way as to maximize the likelihood that the most effective response will be among those generated” (D’Zurilla & Goldfried, 1971, p. 114). Thus, creative imaginativeness supports brainstorming - generating as many ideas as possible without passing judgment on their value, acceptability, or appropriateness (Osborn, 1963), and divergent thinking - generating multiple, novel, and original ideas (Basadur et al., 1982; Brophy, 1998; Cropley, 2006; Gielnik et al., 2012; Mumford et al., 1991), essentially, “letting one’s imagination run loose” (D’Zurilla & Goldfried, 1971, p. 115). When generating a set of alternatives, people rely on their creative imaginativeness to form mental images of potential solutions and try to make connections between seemingly unrelated pieces of information (Vygotsky, 1990). Hence, entrepreneurship researchers have theorized that creativity is required to generate novel and useful ideas for business ventures (Ward, 2004). In addition, researchers have demonstrated empirically that creative personalities are more likely to identify business opportunities (Shane & Nicolaou, 2015) and that creativity

has a direct effect on the generation of original business ideas (Gielnik et al., 2012). Thus, creative imaginativeness should facilitate the generation of new venture ideas.

Hypothesis 1: Creative imaginativeness positively relates to new venture idea generation.

Social Imaginativeness and New Venture Idea Generation and Selection

Social imaginativeness contributes to both new venture idea generation and selection by allowing individuals to understand the wants and needs of others. When entrepreneurs take the perspective of others, they “experience numerous others’ irritations, annoyances, and frustrations with various products and services, increasing the likelihood of discovering a problem that the entrepreneur is uniquely equipped to solve” (McMullen, 2010, p. 120). This increases the chances of formulating and selecting a new venture idea that fulfills that want or need. Design thinking supports this conjecture: “innovation is powered by a thorough understanding, through direct observation, of what people want and need in their lives and what they like or dislike about the way particular products are made, packaged, marketed, sold, and supported” (Brown, 2008, p. 1). Accordingly, this understanding is achieved through empathy, which enables people to “imagine the world from multiple perspectives” (Brown, 2008, p. 3). This empathic ability underlies social imaginativeness, which should facilitate idea generation by allowing the identification of more problems in need of a solution and thus more stimuli to trigger idea generation. Empirical work on perspective taking supports this notion. In three different studies using individual difference measures and experimental manipulation, Galinsky and colleagues (2008) found that perspective taking improved idea generation. Similarly, Grant and Berry (2011) found that taking the perspective of others encouraged employees to engage in creative behavior in the field and participants to generate more novel and useful ideas in the lab. Social imaginativeness should also contribute to idea selection by helping one to choose the highest potential idea by considering the ideas from other’s viewpoints.

Hypothesis 2: Social imaginativeness positively relates to (a) new venture idea generation and (b) new venture idea selection.

Practical Imaginativeness and New Venture Idea Selection

Practical imaginativeness supports new venture idea selection by facilitating logic and causal inference. To illustrate, in a study of entrepreneurs evaluating a series of opportunities, Haynie, Shepherd, and McMullen (2009) found that entrepreneurs logically assess existing resource endowments as well as potential future resources that could be marshalled to exploit the opportunity. They “construct future oriented cognitive representations of what will be” (Haynie et al., 2009, p. 338). Anticipating or forecasting “what will be” requires practical imaginativeness. Finding similar results among entrepreneurs engaged in the evaluation of opportunities, Wood and Williams (2014) suggest that entrepreneurs consistently use rules about novelty, resource efficiency, and worst-case scenarios to evaluate opportunities systematically. They use a structured approach called rule-based thinking to organize and analyze information that is developed over time from education, experience, and interaction with others (Wood & Williams, 2014; Chaiken & Trope, 1999; Smolensky, 1988). Rule based thinking “allows one to use ‘laws of logic and causal inference’ (Chaiken & Trope, 1999, p. 324) to judge the situation and determine an appropriate response (Chaiken, 1980; Devine, 1989; Gilbert, 1991)” (Wood & Williams, 2014, p. 567-577). Practical imaginativeness facilitates this logic and causal inference. Classic philosopher, Immanuel Kant, agrees, noting that imagination “generates much of the connecting structure by which we

have coherent, significant experience, cognition, and language...gives us unified representations so our experiences are not random and chaotic...and makes it possible for us to conceptualize what we receive through perception" (Johnson, 1987, p. 165). Furthermore, because idea convergence and selection conjures up notions of applicability and usefulness (Cropley, 2006), and practical imaginativeness is associated with the logic and reason used to assess applicability and usefulness, we expect that practical imaginativeness should facilitate the selection of new venture ideas.

Hypothesis 3: Practical imaginativeness positively relates to new venture idea selection.

METHOD

Participants in this study were a stratified sample of 506 individuals, who were from the general working population, randomly distributed across the United States, and who varied in their entrepreneurial experience, defined as having owned one's own business or being in the process of starting one's own business. We employ a quasi-experimental design in which participants generate and select new venture ideas based off a common technology. Two expert raters independently scored the number of ideas generated in Part I of the study as well as the originality of their selected idea in Part II of the study, which served as the dependent variables. We followed best practice recommendations by Hinkin (1998) and MacKenzie and colleagues (2011) to develop a measure of *creative, social, and practical imaginativeness*. We then examine how the three different forms of imaginativeness influence the generation and selection of those ideas over and above control variables of *gender, knowledge, experience, and motivation*.

RESULTS

Hypotheses 1 - 3 were tested using hierarchical linear regression to examine the unique variance accounted for by each form of imaginativeness on new venture idea generation and selection above and beyond the control variables. We followed statistical procedure recommendations from Aiken and West (1991) and Cohen and Cohen (1983) proposing that the results from the full model should be used to interpret the regression effects. The results of Hypotheses 1 - 3 are presented in Table 1. We found that creative imaginativeness ($b = 0.06, p < .001$) and social imaginativeness ($b = 0.04, p < .01$) were positively and significantly related to the quantity of ideas generated. Thus, we found support for Hypotheses 1 and 2a. These findings suggest that people high in creative and social imaginativeness generate a larger set of new venture ideas, presumably due to their ability to make novel connections between seemingly unrelated things (creative imaginativeness) and their ability to translate the thoughts, feelings, and intentions of others (social imaginativeness) into new venture ideas. We then tested the effect of social and practical imaginativeness on new venture idea selection. We found that practical imaginativeness ($b = 0.03, p < .001$) was positively and significantly related to the quality of ideas selected, while social imaginativeness was not related to the quality of ideas selected. Thus, we found support for Hypothesis 3, but not Hypothesis 2b. These findings suggest that people high in practical imaginativeness converge on their best new venture idea, presumably due to the logic and reason that supports evaluation and selection of ideas.

DISCUSSION AND IMPLICATIONS

Although we have made great strides in understanding opportunity discovery, evaluation, and exploitation (Shane & Venkataraman, 2000), we have fallen short theoretically, methodologically, and empirically in understanding the precursor of these opportunities: new venture ideas. By

studying idea generation and selection we sought to gain a better understanding of the critical starting point for entrepreneurship, innovation, and strategic change, and by taking a cognitive perspective (Baron, 2004; Mitchell et al., 2007), we sought to unpack whether, how, and why imaginativeness is fundamental to new venture ideation. In the process, we believe our efforts offer a first step toward contributing to theory development and empirical advancement in entrepreneurship and creative problem solving.

We draw from literature in creativity (Runco, 2004), empathy (Davis, 1980), theory of mind (Bagozzi et al., 2013), and problem solving (D’Zurilla & Goldfried, 1971) to clarify the ontological nature of creative, social, and practical imaginativeness as well as how and why each is integral to new venture ideation. We find that over and above the effects of knowledge, experience, and motivation, creative and social imaginativeness predict higher levels of new venture idea generation, while practical imaginativeness predicts higher levels of new venture idea selection. Creative imaginativeness allows individuals to make connections between seemingly unrelated pieces of information to form new means-ends relationships (Eckhardt & Shane, 2003) that result in the generation of new venture ideas. Social imaginativeness allows individuals to understand the wants and needs of others, which increases the chances that one will generate an idea that can fulfill that want or need. Finally, practical imaginativeness facilitates selection as entrepreneurs test their hypotheses against problems they hope to solve, ultimately resulting in well validated new venture ideas. Thus, by explaining why creative, social, and practical imaginativeness facilitate the generation and selection of new venture ideas, we respond to the recent call by Shepherd (2015) to do more work in “in understanding the ‘why’ underlying the activities of organizational emergence” and offer insight into “the micro-foundations of entrepreneurial action.”

Future research could greatly expand the generalizability of our findings across different levels of analysis, phases of entrepreneurship, and contexts. For example, the vast majority of new ventures are founded by teams not individuals (Cardon et al., 2016; Chowdhury, 2005; Klotz et al., 2014). Accordingly, future research exploring how imaginativeness of individuals mix or combine to form team level imaginativeness may increase our understanding of new venture ideation. Additionally, researchers may wish to investigate if entrepreneurs as a population generally possess higher levels of imaginativeness (McMullen & Kier, 2017). Could it be that successful entrepreneurial action requires higher levels of imaginativeness? If so, does being imaginative necessarily predispose a person toward becoming an entrepreneur, trying entrepreneurship, or succeeding at entrepreneurship, or vice versa, does being a successful entrepreneur contribute to one’s imaginativeness? Future longitudinal research is most likely needed to answer such questions, and to further discriminate among the antecedents, correlates, and consequents of imaginativeness.

Furthermore, ideation is but one phase in the entrepreneurship process. Entrepreneurs must also raise capital, build efficient production, distribute their product or service, and adapt to changing market conditions. It would seem that creative, social, and practical imaginativeness would be important in these other phases of entrepreneurship as novel creation (Ward, 2004), perspective taking/empathy (McMullen, 2010, 2015; Prandelli et al., 2016), and planning/organizing (Gielnik et al., 2015) are foundational to entrepreneurship. Therefore, it seems prudent to measure imaginativeness in future studies across different phases in the entrepreneurship process. Finally, ideation is just as relevant within existing organizations as it is within new ventures. Organizations need fresh ideas to foster new product development, strategic initiatives, change, or innovation (Covin & Miles, 1999). Therefore, future research might explore the role of

imaginativeness within work teams from organization behavior (Mathieu et al., 2008), corporate entrepreneurship (Kuratko et al., 2015; Morris et al., 2011), or within top management teams from strategic management (Carpenter et al., 2004).

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Table 1

Results of Regression Analysis

Variable	DV: Quantity of New Venture Ideas		DV: Quality of New Venture Ideas	
	Base Model	Full Model	Base Model	Full Model
Intercept	2.06***	-0.70	1.00***	0.20
Gender ^a	-0.62**	-0.77***	-0.01	0.00
Experience: Age	0.01	0.02**	0.00	0.00
Experience: Entrepreneur	-0.71**	-1.11***	-0.01	-0.10
Experience: Job Level	-0.01	-0.03	0.02*	0.02
Knowledge: Education	0.07	0.07	0.04	0.04
Knowledge: Technology Familiarity	0.13**	0.07	-0.01	-0.03
Effort 1	0.00***	0.00**	0.00	0.00
Effort 2	0.02***	0.02***	0.01***	0.01***
Creative Imaginativeness		0.06***		0.00
Social Imaginativeness		0.04**		0.00
Practical Imaginativeness		-0.01		0.03***
R^2	0.15***	0.24***	0.10***	0.17***
ΔR^2		0.09***		0.07***

Coefficients are unstandardized

^aGender was coded 0 = male, 1 = female

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$