ENTREPRENEURIAL INTUITION: MANAGING UNCERTAINTY AND RISK IN BUSINESS VENTURING ENVIRONMENTS

Cinla Akinci
Surrey Business School
University of Surrey
Guildford, GU2 7XH
United Kingdom
c.akinci@surrey.ac.uk

Eugene Sadler-Smith
Surrey Business School
University of Surrey
Guildford, GU2 7XH
United Kingdom
e.sadler-smith@surrey.ac.uk
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ABSTRACT

The perception and evaluation of business venturing opportunities is often carried out under conditions of limited information, complexity, uncertainty and time pressure and proceed on the basis of non-conscious (i.e. intuitive) cognitive processes which manifest affectively in conscious awareness as entrepreneurial intuitions (‘gut feelings’ or ‘hunches’). In this theoretical paper we will: (1) define entrepreneurial intuition (2) examine a number of antecedents and determinants of entrepreneurial intuition; (3) outline methodological challenges and offer suggestions for further research into this important but under-researched entrepreneurial resource.

Keywords: business venturing; cognition; entrepreneurship; intuition
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Managing and leading ‘from the gut’ embodies a romantic, and even heroic, view of the entrepreneur as someone who is able to manage time pressure, complexity and uncertainty and arrive at conjectures about the creation of new markets through a ‘unique intuition’ (Ehrlich, 1986; Plummer, Haynie and Godesiabois, 2007; Shane and Venkataraman, 2000). The idea of the ‘intuitive entrepreneur/intrapreneur’ looms large in the public and the managerial imagination, promulgated through press reports and business biographies of highly successful individuals (e.g. Welch, 2001). On the basis of previous research we take an intuition to be an involuntary, difficult-to-articulate, affect-laden recognition or judgment that is arrived at rapidly through holistic associations without deliberate or conscious rational thought (Dane and Pratt, 2007). The affective charge, which is an outcome of the process of intuiting, signals attraction towards or avoidance of an object of attention, e.g. a business venturing opportunity (Blume and Covin, 2011; Sadler-Smith, Hodgkinson and Sinclair, 2008). In this theoretical paper we will: (1) define entrepreneurial intuition (2) examine a number of antecedents and determinants of entrepreneurial intuition; (3) outline methodological challenges and offer suggestions for further research into this important but under-researched entrepreneurial resource.

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A distinctive aspect of entrepreneurial cognition is that entrepreneurs are ‘alert’ (Kirzner, 1979) to the extent that they have a “knack for sensing an opportunity where others see chaos, contradiction and confusion” (Timmons, 1989: 1). Entrepreneurs also thrive on change, are adventurous, pursue opportunities, generate ideas, are proactive and innovative, and are “of necessity intuitive because of the characteristics [i.e. incomplete information, time pressure, ambiguity and uncertainty] of the environment in which they are operating” (Allinson, Chell and Hayes, 2000: 32-33). In complex, time-pressured and uncertain situations where there are no clear criteria against which to evaluate the merits of an idea, intuition may be the only way to “sense direction” (Adaman and Devine, 2002: 341)
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and fill in gaps in objective knowledge (Goop, Gopalan and Thakor, 2006) with subjective, albeit informed, judgments and creative insights (Baron and Ward, 2004).

In any attempt to understand entrepreneurship a central issue is the nature of the cognitive processes which underpin opportunity identification, evaluation and exploitation. In terms of the business venturing two components are vital elements of the process: (1) the perception of the existence of a business opportunity; and (2) the evaluation of the viability of a business opportunity. From the point of view of entrepreneurial intuition such perception may be largely non-conscious and the evaluation affectively charged. A successful entrepreneur must be able to not only perceive opportunities which have potential commercial value (Baron, 2004) but also be able to discriminate between opportunities that have a value worth pursuing, and those that do not. The processes of business opportunity conception and evaluation may often proceed on the basis of non-conscious cognitive processes and manifest affectively in conscious awareness as entrepreneurial intuitions.

Based on previous research and theorizing, the following definition is offered:

An entrepreneurial intuition is an affectively-charged recognition of a viable business opportunity arising through involuntary, rapid, non-conscious, and holistic associations of previously unconnected cues and memory objects from which meaningful patterns emerge thereby facilitating significant leaps in thinking that have potential to create new value.

This definition extends previous definitions of intuition (for example, Dane and Pratt, 2007) into the domain of entrepreneurship by incorporating alertness and opportunity recognition; it goes beyond previous definitions of entrepreneurial intuition (for example, Mitchell, Friga and Mitchell, 2005) by accommodating the role of affect in entrepreneur’s intuitive judgment. A necessary corollary of defining a construct is the specification of its antecedents, determinants and causes, and the consequences, implications or results of the construct (Bagozzi and Fornell, 1982; Mitchell et al., 2005); these are summarised below with respect to the above definition (Table 1).

[TABLE 1 ABOUT HERE]

In terms of behaviours and outcomes, entrepreneurs use intuitive judgment in determining whom to transact with, which business trends to follow (Etemad, 2004), and in finalizing investment decisions (Promios and Murray, 2006). At a cognitive level the intuitions which drive entrepreneurs’ abilities to
judge market potential (Lindsay and Craig, 2002) are founded upon a mature, in-depth knowledge of a
domain (Gagnon, Sicotte and Posada, 2000; Thorpe, Holt, Clarke and Gold, 2006) rooted in
individuals’ experiences (Wagner, 2006), tacitly-held theories (Pitt, 1998), and their ability to
perceive, “notice without search” (Gaglio and Katz, 2001: 98) or imagine novel patterns (Lawrence,
Mauws, Dyck and Kleysen, 2005). As a cognitive resource for the management of uncertainty
entrepreneurial intuitions may yield benefits in relation to faster decision-making (Burke and Miller,
1999), organizational learning and sense-making (Crossan, Lane and White, 1999; Dutta and Crossan,
2005), creativity (Simonton, 1980; Sadler-Smith and Shefy, 2007), innovation and technology
development (Ravasi and Turati, 2005), organizational performance (Allinson, Chell and Hayes,
2000) and small firm growth (Sadler-Smith, 2004).

INTUITION AND ‘ALERTNESS’

Entrepreneurial alertness (Kirzner, 1979) refers to the mental representations and interpretations
which give entrepreneurs a unique ‘insight’ into the value of a given resource. It is a dimension of
individual difference, possessed (or exercised) more by certain individuals, thereby enabling them to
perceive cues, for example market needs or under-employed resources, which others do not see. For
example, research has found that internationalization amongst small firms is less a function of
demographics, than of the owner managers’ skills of perception and sensing opportunity (Manolova,
Brush, Edelman and Greene, 2002). Alertness may be the product of “genetic makeup, background
and experience, and/or in the amount and type of information they possess about a particular
opportunity” (Ardichvili, Cardozo and Ray, 2003: 110) and is part an ‘intangible cognitive
infrastructure’ necessary for organizations to be able to successfully perceive and act upon new
opportunities (Krueger, 2000).

More broadly Dutta and Crossan (2005) argued that implicit in Schumpeter’s (1942) view of the
entrepreneur is the notion that he or she is high in terms of the cognitive abilities of creativity and
intuition, as well as the social and emotional skills to overcome scepticism and hostility, implying that
entrepreneurial intuition is part of a relational process. Other researchers (Bird, 1988) have taken a
similar line arguing that to successfully exploit an invention or an idea an alert entrepreneur needs to
have at his or her disposal a blend not only of cognitive abilities but social skills as well. Foremost in
such a ‘mix’ are: (1) creative intuitions with which to develop new ideas; (2) alertness and contextual awareness with which to recognize opportunities, select feasible ideas and reject non-feasible ideas; (3) foresight and intuitive vision to be able to see beyond the present; and (4) ability to interpret and convince others of the value of one’s subjective intuitions (Baron and Ward, 2004; Bird, 1988; Dutta and Crossan, 2005; Mosakowski, 1998), see Figure 1.

[FIGURE 1 ABOUT HERE]

Intuition may help to inform current understandings of the long-established construct of entrepreneurial alertness and that it is expertise (i.e. the ability to intuitively recognize patterns), cognitive/thinking style (i.e. the predisposition for divergent thinking) and affective responses (i.e. ‘gut feelings’) which make up the distinctive attributes of ‘the intuitive entrepreneur’.

**PATTERN RECOGNITION IN INTUITIVE JUDGMENT**

Simon (1987) described intuitions as analyses frozen into habit and the capacity for raid response through recognition. Pattern recognition is also a vitally important process in entrepreneurship (Baron, 2004) but such patterns remain as mere potential until one person “connects the dots” (Baron and Ward, 2004: 559). Through the processes of implicit and explicit learning the patterns and scripts that entrepreneurs (and other domain experts) hold in long term memory gain in clarity and richness enabling them to focus on key attributes of a domain and to identify context-relevant cues (Baron and Ensley, 2006; Baron and Ward, 2004; Dreyfus and Dreyfus, 1986; Klein, 1998, 2003; Zsambok and Klein, 1997). Complex domain-relevant schemas (Dane and Pratt, 2007) confer the ability to execute fast, non-conscious pattern recognition and pattern matching (‘fitting’) processes in decision making environments, including business venturing. In this regard Gaglio and Katz (2001) offered a ‘complexity-of-schemata’ explanation of entrepreneurial alertness in which alert individuals: (1) possess complex domain-specific schemas; (2) are sensitive to signals of market disequilibrium; (3) modify schemas to accommodate non-matching information; (4) are impervious to framing effects; and (5) break existing means-ends frameworks. Gaglio and Katz (2001) further postulated that alertness exists on a continuum from the ‘fully alert’ individual who is willing to make changes in
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their schema, frame or evaluation process to accommodate, predict and profit from new information, through to the ‘non alert’ individual whose goal is the continuation of the status quo.

An entrepreneur’s alertness is founded on a tacit appreciation of the value of and opportunities created by a variety of factors including the environment, new or existing knowledge, technology, new products or services (Alvarez and Busenitz, 2001). As noted earlier, entrepreneurial intuition encompasses perception (noticing) and evaluation (appraisal) not only of potential business opportunities but also their attendant risks. Baron and Ensley (2006) argued that the identification of new business opportunities is supported by the recognition of meaningful patterns in complex arrays of factors by ‘specific persons’:

“Applying pattern recognition to the identification of business opportunities, it seems possible that specific persons recognize opportunities for new ventures because they perceive connections between apparently independent events and then detect meaningful patterns in these connections.” (Baron and Ensley, 2006: 1332)

The distinguishing feature is that the intuitive entrepreneur may not only perceive patterns which others overlook but also is able to: (1) assess, but without necessarily being able to articulate any explicit reasoning processes, whether or not the pattern offers a potentially valuable business opportunity; and (2) appraise its level of risk, often in affective rather than symbolic terms.

We argue that the entrepreneur’s “perceptions of [the] feasibility” (Krueger, 2000: 7) of a business opportunity may be driven by automatic, implicit cognitive processes the operations of which are unavailable to conscious awareness, but which manifests in conscious awareness as an affectively charged judgment (‘gut feel’) which is a distinctive feature of entrepreneurial intuition (Proposition 1). The acknowledgement of importance of pattern recognition as a mechanism for intuitive judgment and the associated affective responses which these evoke (e.g. ‘gut feel’, ‘hunch’ or ‘vibe’) lead to a consideration of the role which affect plays in entrepreneurial intuition.

AFFECT AND INTUITIVE JUDGMENT

One of the limitations of Simon’s foundational account of intuition (Simon, 1987) is that it does not offer any compelling explanation for the role of affect in intuitive judgment. The Somatic Marker Hypothesis (SMH) developed in the 1990s by Damasio and colleagues (e.g. Bechara, Damasio, Tranel and Damasio, 1997; Damasio, 1994) provides a systems-level neuro-anatomical and cognitive
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framework for explaining the roles of non-conscious processing and affect in decision-making (Bechara, 2004). On the basis of a series of seminal laboratory studies using the so-called Iowa Gambling Task, Damasio and his co-researchers demonstrated that the affective response which manifests as ‘gut feel’ constitutes a biasing step in the reasoning process which serves to guide choice, sometimes in advance of conscious awareness (Bechara et al., 1997; Bechara, 2004).

The SMH and the associated programme of research has provided compelling physiological evidence regarding the role of visceral affective responses in decision making under uncertainty and risk, the salient features of which are: firstly, certain emotional regions of the brain (e.g. VMPC, and amygdala) work in concert with higher cortical regions, in decision making especially in the assessment of risk (i.e. judging the riskiness of a business venture is not purely cognitive), but these effects may be in advance of conscious awareness; secondly impairment of functioning of the relevant neural circuitry (as a result of injury or disease) may have significant deleterious consequences for individuals’ economic choices and behaviors. We argue that in the entrepreneurial context even though such individuals are otherwise cognitively unimpaired they may signal fail to actively avoid choices that lead to loss and continue to make disadvantageous (i.e. high-risk) business venturing decisions (see Bechara and Damasio, 2005: 346) (Proposition 2).

The sensation of ‘gut feel’, the conscious outcome of non-conscious intuitive processes, is adaptive to the extent that it may signal attraction towards or avoidance of a situation (Le Doux, 1996), therefore an entrepreneur’s non-conscious appraisal of a potential business opportunity may result in either: (1) positive assessment, and an evaluation of an acceptable level of risk or potential for high payback, or; (2) negative assessment, and an evaluation of an unacceptable level of risk (see: Slovic, 2002 and the ‘affect heuristic’). We argue that the operation of the affect heuristic in the uncertain environment of business venturing means that a feeling of liking/disliking towards an opportunity biases decision making such that those opportunities which evoke positive affect are seen as having high benefit and low risk, and vice versa (Proposition 3). Moreover, the potency of the affective response associated with intuitive cognition may lead to it over-riding analytical cognition.

In so far as behaviours are concerned the valence associated with ‘gut feel’, ‘hunch’ or ‘vibe’ serves as a select/approach (positive valence) or reject/avoid (negative valence) decision criterion and
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provides a quick, low cognitive effort mechanism (i.e. a heuristic) for narrowing down the range of options in decision making tasks. This can be advantageous in the uncertain, fast-moving, complex and time-pressured decision environments which many entrepreneurs operate in but may be subject to the operation of the affect heuristic and associated cognitive biases.

INTUITIVE COGNITIVE STYLE

The extent to which successful entrepreneurs are capable of discerning patterns consisting of cues that are seemingly irrelevant and incoherent to others (and which consequently they may overlook - in Baron and Ward’s (2004) terms they are unable to ‘connect the dots’) is an important aspect of individual difference in entrepreneurial cognition. A cognitive style is an individual’s habitual approach to representing, organizing and processing information (Messick, 1984) which serves as an information processing heuristic at multiple levels ranging from the perceptual to the meta-cognitive (Kozhevnikov, 2007). Kickul and Gundry (2011: 88) noted that entrepreneurs’ cognitive styles are likely to influence “the ways in which they learn, gather knowledge, process information, and make decisions”. Dimov (2007) argued that it is the entrepreneur’s style of thinking which is likely to determine the degree of convergence versus divergence in the identification of specific business opportunities.

There are many different conceptualizations of cognitive style. Intuitive and analytical cognitive styles have been of particular interest to entrepreneurship researchers (e.g. Brigham, De Castro and Shepherd, 2007; Kickul, Gundry, Barbosa and Whitcanack, 2009). An intuitive style is holistic and depends on broad scanning, cognitive fluidity and the association of prima facie unrelated components (Simonton, 1980). Such thinkers are unconventional, combine disparate elements, produce multiple answers, shift perspectives, transform the known and take risks (Cropley, 2006). They are able to think globally and thus are able to “distinguish[ing] the forest from the trees” and “judge which questions are important and which ones are not”. (Sternberg, 2006: 89). Simonton (1980: 22, 26 and 49) described ‘intuitives’ as being able to make creative integrations requiring remote associations operating “below the threshold of cognition” based on “physical, emotional [affective] and connotative relationships” and appealing to “gut feelings” which may not have any apparently rational foundation.
In the context of entrepreneurship the consequences of strong preferences for intuition or analysis were exemplified by a comment made by a participant in Dutta and Thornhill’s study of business venturers’ growth intentions:

“You cannot grow a business and seize opportunities if you get too focused on rules all the time. Sometimes you should let your thoughts wander - then you may get intuitions that are extraordinary … you suddenly find a space where no other competitor has gone, and that becomes your very own space for growing the business.” (Dutta and Thornhill, 2008: 321)

Allinson and Hayes (1996) found entrepreneurs to be more intuitive in their cognitive style than managers in general, and more similar in this regard to senior managers and executives. A study of experienced business founders in the USA found the cognitive styles profiles of entrepreneurs in terms of linear/non-linear thinking to be more balanced than those of accountants who were highly linear (broadly equivalent to analytical) or of actors who were highly non-linear (broadly equivalent to intuitive) (Groves, Vance, Choi and Mendez, 2008). We argue that intuitive expertise is a necessary but insufficient condition for entrepreneurial intuition, and that cognitive style moderates the relationship between expertise and opportunity identification (Proposition 4). Individuals who possess the complex, domain-relevant schemas (i.e. the necessary expertise) and have an intuitive cognitive style will exhibit higher levels of creativity, generate more novel ideas in the identification of business opportunities than those with comparable levels of expertise allied to an analytical style.

ENTREPRENEURIAL INTUITION AND ORGANIZATIONAL LEARNING

Dutta and Crossan (2005) argued for a distinction between expert intuition and entrepreneurial intuition. The latter relies not only on the expert knowledge base of an individual but also on the creative capacity of certain individuals to recognize gaps and identify possibilities and thereby “initiate innovation and transformation in the economy on the basis of their intuition about the emerging future” (Dutta and Crossan, 2005: 437). Crossan and her co-researchers also recognized the significance of relational processes in the articulation and communication of ‘intuitive insights’. Crossan et al. (1999) presented a four-stage (i.e. intuiting, interpreting, integrating, and institutionalizing) organizational learning framework spanning individual, group, and organizational levels of analysis. The 4I framework incorporates knowledge flows between three levels, offers insights into how ideas transcend from individuals’ intuitions to the wider organizational system and
recognizes that learning has interpretive as well as cognitive facets (Dutta and Crossan, 2005). 4I also recognizes the significance of entrepreneurs’ prior experience and learning and the importance of “intuitive insights” (Crossan et al., 1999: 525) in business venturing decisions.

In the 4I framework ‘intuiting’ is a preverbal ‘inexplicable’ sense of what might be possible within a given configuration of seemingly disconnected cues (Crossan et al., 1999). Given that intuition is affectively-mediated and therefore non-verbal, the 4I framework is helpful in that it specifies that if organizational learning is to occur intuiting (individual level) must lead to interpreting (group level) hence social as well as cognitive processes are pivotal to the gestation, articulation and operationalization of intuitions. Interpreting is “the explaining of an insight [or intuition], or idea to one’s self and to others” (Crossan et al., 1999: 525). Processing transcends from the pre-verbal or non-verbal to the verbal, this requires the use of shared language and often relies on non-literal means of expression such as metaphors (Lakoff and Johnson, 1999; Vaughan, 1979).

For example, in terms of the cross-domain mappings involved with respect to judging a potential business venturing agreement the metaphor “don’t ask me why, this deal just stinks” uses the primary metaphor of smell (sensory motor) based on the mapping ‘bad is stinky’, grounded in the somatic experience of being repelled by foul smelling objects (Feldman, 2008). Similarly, with respect to judging a potential venturing partner “don’t ask me why but I’d trust her, she’s a really warm person” uses the primary metaphor of temperature (sensory motor) based on the mapping ‘warmth is good’ grounded in the positive somatic experience of feeling warm (Feldman, 2008).

Crossan et al. (1999) included images as an output of intuiting as well as metaphors, moreover such images can be in a variety of sensory modalities such as olfactory and tactile as well as visual. Because they are pre-verbal or non-verbally mediated the articulation and evaluation of intuitions requires them to be expressed using metaphor and imagery, thereby rendered communicable, and enabling shared interpretation and construction of meaning and facilitating collective appraisal of the viability of a potential business venturing opportunity.

As noted above, Bird (1988) argued that in order to exploit a business opportunity an entrepreneur needs to have at her or his disposal a blend not only of cognitive abilities but social skills as well. The ability to express intuitions metaphorically or imagistically is part of the social and emotional skill set.
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required to build shared interpretations and evaluations, and also to counter scepticism and hostility. The building of shared meaning may be one way in which firms can foster the collective cognitions (West, 2007) and shared intuitions (Dutta and Crossan, 2005) that may afford them first-mover advantage in markets as opportunities arise. “Collective intuition” has been mooted as a distinctive cognitive competence of effective entrepreneurial top management teams (Eisenhardt, 1999: 66).

IEL recognizes that entrepreneurial action begins in an initial preconscious reflection by an individual (intuiting). An entrepreneur must necessarily explain and defend a business concept arrived at intuitively in order that it may be interpreted and further developed and refined. It is through conversations with other stakeholders that the entrepreneur is able to sharpen the interpretation of the initial intuition. We argue that imagistic, metaphorical or narrative-based conversations enable entrepreneurs to describe intuitively-derived business venturing opportunities or decisions (Proposition 5). Interpreting intuitions occurs both within the rational minds of individual entrepreneurs (internal dialogue) as well as in the linguistic spaces of their social interactions with other stakeholders (Dutta and Crossan, 2005). However, without the interpretative processes which arise as a result of external dialogue we argue that individuals’ entrepreneurial intuitions are largely redundant in so far as ‘being entrepreneurial’ is concerned, hence the transition from intuiting to interpreting is a social process (see Dimov, 2007).

METHODOLOGICAL CHALLENGES

There are a small but growing number of studies of intuitive judgment in management and entrepreneurial contexts; that said the study of intuition continues to provide challenges to researchers. Having explored the antecedents and boundary conditions of entrepreneurial intuition we now examine so of the issues which are likely to be encountered in researching this construct.

Self-report, in spite of its inherent drawbacks, has been the mainstay of much intuition research and contributed greatly to the understanding of intuitive judgment in management and entrepreneurship (for example, Allinson et al., 2000; Brigham et al., 2007; Hough and ogilvie, 2005; Khatri and Ng, 2000). Self-report measurement should employ instruments that are not only reliable and valid but are compatible with dual-process theories (Hodgkinson et al., 2008) and three candidate instruments may be considered in this regard: Cognitive Style Index (CSI, Allinson and Hayes, 1996); Preference
for Intuition and Deliberation Scale (PID, Betsch, 2004); and Rational Experiential Inventory (REI, Epstein, Pacini, Denes-Raj and Heier, 1996).

The inherent subjectivity of intuition invites the use of methods that are specifically attuned to the phenomenology of ‘gut feel’ and which accord primacy to the intuitor’s subjective experiences (Remenyi, Williams, Money and Swartz, 1998). An implication of a phenomenological stance is a move away from objectivity per se to the acceptance that an individual’s interpretation of an experience is an essential part of the experience itself (Cope, 2005). One potential pitfall is that in searching for phenomenographic accounts of entrepreneurial intuitions researchers may, as a result of their preconceptions, find what they expect to find. Cope (2005) argued that bracketing one’s own preconceptions and trying to understand phenomena from the perspective of those who experience it is one solution to this problem. In phenomenological inquiry the goal of the phenomenological interview is to gain a first-person description of some specified domain of experience, where the course of the dialogue is set largely by the participant (Cope, 2005; Thompson, Locander, and Pollio, 1989). Hence, by endeavouring to suspend one’s own theoretical preconceptions and examine entrepreneurial intuition from the point of view of the intuitor the risk of conceptual and theoretical biases are at least acknowledged and ameliorated even if not eliminated.

Given that positive instances of intuition in business venturing (‘hits’) have, in the popular literature at least, tended to be more visible than negative instances (‘misses’), it is imperative that researchers study both successful and unsuccessful business venturing decisions that were based upon intuitions, for example by using Flanagan’s (1954) critical incident technique (CIT) (see Akinci, 2011). The study of serial entrepreneurs might examine if and how such individuals deploy intuitive judgment, if intuition averages-out to pay dividends over the longer term, and whether serial entrepreneurs and novice entrepreneurs differ from each other in their use of intuition.

The relationship between intuition and the perception of risk and risk-taking behaviour (see Slovic, 2002) and whether perception of risk moderates the relationship between intuitive judgment and entrepreneurial action (or intention) should also be examined. In this regard the cognitive mapping techniques that were successfully used to study managers’ intuitions by Clarke and Mackaness (2001) could also be applied in entrepreneurial contexts.
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Developments in cognitive neuroscience have begun to identify ‘hard’ neural correlates of processes which underlie intuitive judgment (Segalowitz, 2007) and intuition researchers are beginning to collaborate with the neuroscience community to make use of the new generation of brain imaging techniques (such as fMRI and PET) to study cognition (see Leiberman, 2007). Perhaps it is only a matter of time before ‘neuro-entrepreneurship’ enters the fray alongside neuro-economics (Goetz and James, 2008) and neuro-marketing (Knutson, Rick, Wimmer, Prelec and Lowenstein, 2008).

CONCLUSION

Effective entrepreneurship cannot be considered to rely exclusively on intuition or analysis, or indeed cognition or affect (Baron and Ward, 2004), rather it must be served by two interacting and mutually reinforcing processes: the rational, analytic and cause-and-effect related processes which serve to structure intention and action, and underlie goal-setting, formal business plans, and resource acquisition/allocation and the intuitive, holistic and contextual thinking which supports vision, hunch, an expanded view of untapped resources and a “feeling of the potential of the enterprise” (Bird, 1988: 443). Entrepreneurial cognition is a complex and integrated process the effectiveness of which is contingent upon the interdependent functioning of intuitive and analytic (i.e. dual) processing systems. But this interdependence serves to remind us not to lose sight of the fact that successful business venturing cannot be considered as relying exclusively on intuition or analysis, or indeed cognition or affect, but upon the melding of these two fundamental aspects of human cognition in the social context of business organizations and their environments. In this paper we propose entrepreneurial intuition as a potentially valuable theoretical resource for understanding entrepreneurial behavior and the management of complexity and uncertainty in fast-moving business venturing environments.
REFERENCES


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TABLE 1. Definition, antecedents and consequences of entrepreneurial intuition

<table>
<thead>
<tr>
<th>Entrepreneurial Intuition</th>
<th>Definition</th>
<th>Antecedents</th>
<th>Consequences</th>
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<tbody>
<tr>
<td><strong>Definition</strong></td>
<td>An entrepreneurial intuition is an affectively-charged recognition of a viable business opportunity arising through involuntary, rapid, non-conscious, and holistic associations of previously unconnected cues and memory objects from which meaningful patterns emerge thereby facilitating significant leaps in thinking that have potential to create new value.</td>
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<td><strong>External Antecedents</strong></td>
<td>Environmental stability (Khatri and Ng, 2000)</td>
<td>Task characteristics (intellective vs. judgmental) (Laughlin, 1980)</td>
<td>Faster decision-making (Burke and Miller, 1999)</td>
</tr>
<tr>
<td><strong>Internal Antecedents</strong></td>
<td>Domain expertise (Dreyfus and Dreyfus, 1986)</td>
<td>Complex domain relevant schemas (Dane and Pratt, 2007)</td>
<td>Organizational learning and sense-making (Crossan et al., 1999; Dutta and Crossan, 2005)</td>
</tr>
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<td></td>
<td>Affective charge (Dane and Pratt, 2007; Slovic, 2002)</td>
<td>Experiential system (Epstein et al., 1996)</td>
<td>Innovation and technology development (Ravasi and Turati, 2005)</td>
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<td></td>
<td>Reflexive (X) system (Lieberman, 2007)</td>
<td>Reflexive (X) system (Lieberman, 2007)</td>
<td>Organizational performance (Allinson, Chell and Hayes, 2000)</td>
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<td></td>
<td>Neural substrates of decision-making, inc. ventro-medial prefrontal cortex (VMPC) (Bechara, 2004; Bechara et al., 1997; Damasio, 1994)</td>
<td>Neural substrates of decision-making, inc. ventro-medial prefrontal cortex (VMPC) (Bechara, 2004; Bechara et al., 1997; Damasio, 1994)</td>
<td>Firm growth (Sadler-Smith, 2004)</td>
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Figure 1. Conceptual framework (adapted from Hansen, Lumpkin and Hills, 2011)

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Cognitive style (intuitive, analytical)

Domain expertise (complex domain relevant schemas)

Learning (explicit/implicit, experience, feedback, etc.)

Insight (‘eureka moment’, ‘connecting the dots’)

Intuitive knowing (‘feeling of knowing’, incubation)

Intuitive judgment (‘sense of possible’, evaluation of idea, attraction/avoidance)

Interpretation (abstract/symbolic, concrete/metaphorical, internal/external dialogue, images, etc.)

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CONCEPTION ———————————————————————————————————— EVALUATION