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**THE MIND IN THE MIDDLE: TAKING STOCK OF AFFECT AND COGNITION
RESEARCH IN ENTREPRENEURSHIP ¹**

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We want to express our deepest gratitude to the scholars who generously contributed their time and insights to reviewing the manuscripts submitted to this special issue, providing constructive suggestions for their development, and thereby facilitating our selection of the papers presented here. We greatly appreciate your efforts. Without you, we would not have been able to put this special issue together.

We also extend our warmest thanks to Professor Ossie Jones and his team for trusting us with the direction of this special issue (and providing us with guidance whenever we needed). Lastly, we express our sincere gratitude to Ms. Emma Missen for the great patience and calm with which she helped us manage the logistics of producing this special issue.

Research on the affective and cognitive underpinnings of entrepreneurship has proliferated in recent years. Working from a cognitive angle, scholars have examined how entrepreneurs ‘make sense’ of the world to imagine, identify and design ideas for new products, services or business models (Baron & Ensley, 2006; Cornelissen & Clarke, 2010; Grégoire, Barr, & Shepherd, 2010), how they evaluate such opportunities (Mitchell, Smith, Seawright, & Morse, 2000; Mitchell & Shepherd, 2010; Wood & Williams, 2014), how they form intentions for developing and pursuing these ideas (Dimov, 2007; Liñán, Urbano & Guerrero, 2011; Siu & Lo, 2013), how they make decisions for marshalling resources and exploiting these ideas (Baker & Nelson, 2005; Dolmans, Van Burg, Reymen & Romme, 2014; Kemmerer, Walter, Kellermanns & Narayanan, 2012), how investors, consumers and other stakeholders make sense of entrepreneurial efforts (Chen, Yao & Kotha, 2009; Martens, Jennings, & Jennings, 2007), and how interactions with other entrepreneurs and external stakeholders influence the development of early routines and strategies in their burgeoning ventures (Larrañeta, Zahra, & Gonzales, 2012; Santos & Eisenhardt, 2009). In parallel to these cognitive developments, a growing number of scholars have paid increasing attention to the influence that affect, emotions, feelings, moods and other passions can have on entrepreneurship (Baron, 2008; Cardon, Foo, Shepherd & Wiklund, 2012; Foo, Uy & Aguinis, 2009).

Research on these topics has matured considerably in recent years, so much so that a special issue of the *International Journal of Management Reviews* became increasingly timely and pertinent, not only to take stock of current bases of knowledge but also to open up opportunities and directions for further research. In spite of substantial advances and contributions, extant entrepreneurship research on affect and cognition remains characterized by a multiplicity of theoretical approaches, foci, methodologies, variables and measures (cf., Carsrud & Brannback, 2009; Forbes, 1999; Grégoire, Corbett & McMullen, 2011; Krueger, 2003; and Mitchell, Mitchell & Randolph-Seng, 2014). Although this multiplicity affords a lot of breadth and richness, it also signals potential risks—from the lack of a coherent knowledge base (making this research confusing, difficult to understand, or seemingly superficial) to the risk of an atomistic evolution, with minimum exchanges between ‘siloes’

groups of scholars, limited theoretical integration and increased chances of redundant repetitions without real advances in understanding.

To help guard against these risks and in order to augment the impact and value-adding contribution of future research, we invited scholars to submit systematic reviews documenting the progress that has been made in relevant research streams concerned with the affective and cognitive underpinnings of entrepreneurship. In addition, we also encouraged scholars to build on their systematic review to develop a set of theoretical signposts that would guide future research. And we called for insightful and innovative suggestions for augmenting the impact of future research—whether in the form of a framework, process model, set of propositions, or the articulation of a research agenda.

After some 16 months of preparing, reviewing and organizing the special issue, it is with great pleasure—and a fair measure of pride—that we present the results. Together, the six manuscripts selected for this special issue of the *International Journal of Management Reviews* represent the collective work of some 22 scholars from 14 institutions located in eight different countries. More importantly, these six papers offer a state-of-the-art ‘tour d’horizon’ of both the past achievements and the rich potential of research on the affective and cognitive dimensions of entrepreneurship.

Building on our synthesis of the papers in this special issue, we start this introductory essay with a presentation of the ‘the road travelled so far’ in terms of the focus and achievements of past research. We then introduce the six papers forming this special issue on ‘the mind in the middle’ and detail their respective focus and contributions. Finally, we conclude this introduction by reflecting on these papers’ implications, and offer a number of observations about future research and the ‘road ahead’.

THE ROAD TRAVELLED SO FAR

Entrepreneurship research on cognition has been reviewed before—including in this very journal (Forbes, 1999). Writing in the late 1990s, Forbes was able to identify some 34 entrepreneurship cognition articles published in 20 select journals between 1983 and 1998. Twelve years later, Grégoire, Corbett & McMullen (2011) identified 154 entrepreneurship cognition articles published in 47

different academic journals between 1976 and 2008. For their part, the six author teams in this special issue collectively analysed 227 different pieces of research, including 217 research articles published in 61 academic journals. Figure 1 traces the temporal evolution of the field's overall realm—based on the samples of entrepreneurship studies analysed in these different reviews. The figure attests that there now exists a vibrant community of authors (and interested editors, reviewers and readers) actively engaged in advancing academic knowledge on the affective and cognitive dimensions of entrepreneurship. In this regard, we note that although entrepreneurship research on affect and cognition is well represented in entrepreneurship journals, it also continues to appear in premier academic journals associated with the managerial, organizational and social sciences. This indicates that research on the affective and cognitive dynamics of entrepreneurship is seen as having implications beyond the challenges and phenomena more directly germane to entrepreneurship research on opportunity identification, evaluation and development, new venture formation and entrepreneurial pursuits.

Please insert Figure 1 about here

Looking more closely at the articles sampled in these different reviews, Figure 2 reveals that research on the affective and cognitive dynamics of entrepreneurship has gradually transitioned from being primarily articulated through theoretical pieces in the 1970s and early 1980 to a period of parallel theoretical and empirical developments in the 1990s and early 2000s, and to a gradual emphasis on empirical works in recent years. Needless to say, this ratio varies between different research streams. For instance, the recently emerging research streams on situated and embodied cognition (see Dew et al. in this issue) or entrepreneurial intuition (see Baldacchino et al. in this issue) present lower ratios of empirical pieces—respectively, 9:21 (43%) and 12:25 (48%)—than research on the affective dynamics of entrepreneurship (45:65 or 69%, see Delgado-García et al. in this issue), on entrepreneurial team cognition (31:44 or 70%, see Mol et al., in this issue), or on opportunity evaluation (37:53 or 69%, see Wood & McKelvie, in this issue).

Please insert Figure 2 about here

Yet what about the field's progress to date? To what extent have scholars interested in advancing knowledge on the affective and cognitive underpinnings of entrepreneurship been able to do so? Here as well, it becomes relevant to contrast our special issue with past reviews.

Building on his 1999 analyses, Forbes observed that the first wave of research at the interface of entrepreneurship and the cognitive sciences had successfully established four sets of findings:

“First, there is support for the theory of planned behaviour as an explanation for the formation of entrepreneurial intentions. (...) Second, there is substantial evidence that entrepreneurs prefer informal sources of information to more formal sources. (...) Third, there is at least preliminary evidence for the existence of ‘entrepreneurial cognition’ (Busenitz and Lau, 1996), a distinctive set of thought processes that entrepreneurs use to interpret data. (...) Finally, research suggests that mental models play a critical role in enabling entrepreneurs to structure behaviour in their organizations (pp. 426-7).”

As such, Forbes' conclusions were largely positive: “scholars who are interested in this area should find encouragement in the fact that there is already a ‘critical mass’ of research that establishes the significance and feasibility of research on the topic (p. 432).”

By contrast, Grégoire, Corbett and McMullen (2011) took a more critical stance. Focusing on the conceptual articulation of past research, these authors lamented that cognition research in entrepreneurship research had yet to leverage the cognitive perspective's full array of theoretical and methodological implications.

“In a sense, entrepreneurship cognition may have been a victim of its own success. Conceptual models and empirical studies that emphasize the effects of cognitive variables have been so fruitful that scholars have had few incentives to examine fully the complexity of cognition as a process (and/or across levels of analysis). Over the years, however, this success has had the unintended effect of masking the conceptual foundations that cognitive research in entrepreneurship could build upon to cast light on the so-called ‘cognitive difference’ of entrepreneurs (cf. Shaver and Scott, 1991) (Grégoire et al., 2011: 1456).”

Besides recurrent debates about the specificity of entrepreneurs' cognition compared to that of individuals and groups in other walks of life (see Baron 1998; Busenitz & Barney, 1997; Sarasvathy, Simon, & Lave, 1998), the period since Forbes' (1999) initial review has seen a proliferation of research efforts that not only adopted (or were inspired by) a cognitive perspective, but also drew on ideas, insights and methods from various disciplines (see Grégoire et al., 2011). In addition, cognition-inspired research in entrepreneurship has also integrated constructs such as bricolage (Baker & Nelson, 2005; Philips & Tracey, 2007), effectuation (Perry, Chandler & Markova, 2012; Sarasvathy, 2001) and learning capabilities (e.g., Bingham & Eisenhardt, 2011; Corbett, 2007) that have been induced from prior studies of entrepreneurs in action. The upshot of this proliferation of constructs, terms and research foci is that the field has expanded significantly beyond Forbes' (1999) initial review.

The six papers in this special issue not only reflect this pluriform articulation of research at the interface of affect, cognition and entrepreneurship, but also take a dual stance vis-à-vis the 'road travelled so far'. On the one hand, all six papers unanimously celebrate the manifest growth of research on the affective and cognitive dynamics fostering entrepreneurship. On the other hand, however, all six papers express legitimate concerns about the manner with which some aspects of research have been articulated so far. In this regard, Table 1 presents the authors, title and topics of the six papers in this special issue, but also highlights the primary motivations advanced by these authors to position their review.

Please insert Table 1 about here

Solely looking at these motivations, it would be tempting to conclude that for all its growth since Forbes' (1999) review, entrepreneurship research on affect and cognition remains both highly fragmented and conceptually underdeveloped. Yet a different picture begins to emerge when we consider that many of these authors' criticisms concern the theoretical articulation of extant research—and its consequent operationalization in sound research methods, designs and measures. More

importantly, each paper in this special issue builds on a systematic review of the literature to offer concrete solutions to face these challenges.

This overview gives us an excellent opportunity to formally present the six papers in this special issue. Each in their own ways, these papers contribute to advance scholarly understanding of entrepreneurship by structuring and systematizing a particular stream of research that places affect, cognition and the ‘entrepreneurial mind’ front stage and centre.

THE MIND IN THE MIDDLE

1. Situated entrepreneurial cognition

The first paper in this issue, by Nicholas Dew (Naval Post Graduate School), Dietmar Grichnik (University of St. Gallen), Katrin Mayer-Haug (WHU - Otto Beisheim School of Management), Stuart Read (Willamette University), and Jan Brinckmann (ESADE Business School), reviews the emerging entrepreneurship research drawing from the theoretical perspectives of embodied and situated cognition. Synthesizing 21 articles recently published in this nascent area of research, Dew and his colleagues suggest a useful framework that bounds and organizes academic research on this intriguing approach, map out the progress made to date, and propose avenues to direct further studies as part of a coherent research agenda within entrepreneurship. Their review’s starting point is that cognition cannot be “boxed-in” as a mental condition or state (Mitchell et al., 2011). Instead, the authors advance three theses as a way of organising academic thinking, or rather, re-thinking of entrepreneurial cognition: 1) The embedding thesis, which suggests that cognition is tied into actions and objects; 2) The embodiment thesis, which stresses that processes and contents of cognition are directly embodied; and 3) The situated thesis, which argues that cognition is not located in individual’s heads but is shaped—or at least, influenced—by key aspects of the social, physical, and/or cultural contexts (see Clarke & Cornelissen, 2014; Cornelissen, 2013; Cornelissen & Clarke, 2010; Mitchell et al., 2011; Mitchell et al., 2014). Taken together, these three theses capture and summarize past research in this area and lay out a roadmap for further research. In this regard, one of

Dew and colleagues' most helpful contributions is to deconstruct the broad and somewhat ambiguous label of socially situated cognition (Mitchell et al., 2011) into three specific theses that may guide future research efforts into more tractable propositions to advance academic understanding of entrepreneurship.

2. Fear and entrepreneurship: friends or foes? A review and research agenda

The effect of entrepreneurs' fear—and specifically fear of failure—on their intentions and behaviour in relation to starting (or continuing with) a new venture is one of entrepreneurship research's long-standing themes. The author team of James Hayton, Gabriella Cacciotti (both at the University of Warwick Business School), Andres Giazitzoglu (Newcastle University), J. Robert Mitchell and Chris Ainge (the latter two at Western University's Ivey Business School) take this theme as a starting point for their review of 44 empirical studies on the topic of fear.

Among their many noteworthy findings, these authors observe an over-emphasis of prior research on the detrimental effects of fear of failure—as far as it involves inhibiting entrepreneurs to start a business. According to Hayton and his colleagues, this emphasis deflects attention away from how fear or failure may manifest itself at other stages of the entrepreneurial process. In order to move beyond this emphasis and open up new areas of investigation, these authors encourage future research to look at the motivating factors of fear, and its ability to trigger deeper or more considered deliberations, beyond its potential inhibiting force.

The authors also note that past research has tended to conceptualize fear as either a stable and person-related disposition or as a temporary and contextually motivated emotional state, but with “little or no cross-citation among these streams of research” (Hayton et al., 2015: (p. XX)). The result is that fear is often categorized as a stable and continuous disposition, which arguably assimilates emotional states to personality traits. Instead, the authors argue for a more considerate view in which personal dispositions and contextually motivated emotions are modelled together, and along the entire entrepreneurial trajectory of developing and growing businesses over time.

3. How affect relates to entrepreneurship: A systematic review of the literature and research agenda

Lead by a team of Spanish scholars from the Universidad de Burgos—Juan Bautista Delgado-García, Esther de Quevedo-Puente, and Virginia Blanco-Mazagatos—the third article in this special issue focuses on a ‘hot’ topic: the articulation of entrepreneurship research on affect, emotion, moods, and other passions. Content-analysing a sample of 65 articles, the authors document: 1) the particular facets of affect being investigated; 2) the anchoring of different studies at particular levels of analysis; 3) the articulation of extant research in terms of the antecedents or consequences of affect; and 4) the breakdown of consequence-focused research across various stages in the entrepreneurial process. Building on their analyses, the authors develop a research agenda encouraging future studies to not only “examine previously overlooked topics and facets of affect in isolation but to test competing cognitive and non-cognitive arguments relating to affect’s role across levels of analysis and stages of the entrepreneurial process (p. XX abstract).”

Over and above its extensive analysis of relevant articles, the review has the added benefit of offering a concise and insightful synthesis of some key principles for studying affect, including subtle distinctions between the related terms of emotion, affect, affective states and traits, emotional intensity and valence, the interplay between affect and cognition, and recent developments from the perspectives of neuroscience and embodied cognition (see also Dew et al., in this issue). Coupled with a thought-provoking research agenda, Delgado-García, Quevedo-Puente and Blanco-Mazagatos provide the field with a much-needed guide upon which to build the next wave of studies on the affective dimensions fostering entrepreneurship.

4. Intuition in entrepreneurship: A critical analysis and research agenda

The special issue’s fourth paper is from a group of scholars who have been studying the nature and impact of intuition in entrepreneurship for a number of years. Lead by Leonie Baldacchino (from the University of Malta’s Edward de Bono Institute for the Design and Development of Thinking), the

team included Deniz Ucbasarn (University of Warwick), Laure Cabantous (City University of London's Cass Business School), and Andy Lockett (University of Warwick). Though other reviews of intuition research were recently carried out in the related field of management (see Akinci & Sadler-Smith, 2012, but also Armstrong, Cools & Sadler-Smith, 2012), Baldacchino and her colleagues take up the challenge of deconstructing the notion of intuition as it could be applied in the more specific domain of entrepreneurship research.

Acknowledging that entrepreneurship research on intuition arguably represents one of the 'smallest' areas of research (by number of published articles) among the topics investigated in this special issue, the value of Baldacchino and colleagues' review ultimately lies in mapping out the vast territory that remains to be covered. Among other issues that emerged during the review process, we particularly welcomed one of the reviewers' challenging remarks to the authors, asking them to better unpack what could be truly unique about the concept of entrepreneurial intuition—as opposed to simply applying existing intuition theories and methods to the particular context of entrepreneurship. By documenting what is known and has been studied about intuition in entrepreneurship circles, Baldacchino and colleagues' review provides a basis to face this unresolved challenge.

5. Entrepreneurial team cognition: A review

Given that the vast majority of nascent entrepreneurial and new venture activities occurs in teams, the paper by Eva Mol, Svetlana Khapova and Tom Elfring (all from VU University Amsterdam) represents a timely intervention to make sense of extant work, advocate conceptual integration, and offer a roadmap for future work at the intersection of teams and cognition. Their motivation rests on the realization that “the diversity of existing concepts and the ambiguity in the way in which the concepts are operationalized constrain the comparability of findings across studies (p. XX)” and that “the lack of a formal definition of entrepreneurial team cognition hampers the theoretical and empirical development in this area (p. XX).” They ask two simple but powerful questions: (1) What is

entrepreneurial team cognition?; and (2) How does entrepreneurial team cognition interact with relevant entrepreneurial inputs, processes, and outcomes?

Following a diligent search process, they review 44 papers from which they identify three defining features of entrepreneurial team cognition. First, it is an emergent state that arises from the interactions among team members and thus constitutes more than the sum of its parts. Second, it is embedded in, but distinct from, team processes. Third, it involves the sharing of content-related knowledge. To situate this construct, the authors employ an input-mediator-output framework that highlights the interplay of team cognition with behavioural processes associated with performing specific tasks and with team member interactions. Looking ahead, this paper points to a steep but now clearly visible path for advancing research on the topic. Understanding the emergence of team cognition and better distinguishing it from the team processes in which it is embedded calls for research that does not confound the two, and invite scholars to ‘step out of their comfort zone’ in the development of conceptual and empirical tools.

6. Opportunity evaluation as future focused cognition: Identifying conceptual themes and empirical trends

Contributing to the flourishing but somewhat disintegrated literature on entrepreneurial opportunities, Matthew Wood (Baylor University) and Alex McKelvie (Syracuse University) pave the way for research aimed at better understanding how entrepreneurs evaluate potential opportunities. Although numerous studies have investigated when and how entrepreneurs identify and exploit opportunities, researchers have recently started to make progress in understanding the process that links opportunity identification and exploitation, namely opportunity evaluation. In this respect, Wood and McKelvie broadly consider opportunity evaluation as involving “dynamics associated with individuals’ judgments, beliefs, and decisions regarding the degree to which external stimuli (e.g., events, situations, and circumstances) represent a personally desirable (i.e., attractive) future course of action integrating the literature into a thematic framework to organize conceptual and empirical

themes as well as identify publication patterns” (p. XX). Building on a systematic literature review of 53 papers, the authors show that the literature converges on three key ‘themes’ associated with opportunity evaluation, namely mental models (the mental images one makes of ideas, events and circumstances as an opportunity), integration (the synthesis of idiosyncratic dispositions, knowledge and goals) and social cognitions (the similarity assessment of an individual’s images with those held by others). The authors then show how research in these different themes contribute to a better understanding of entrepreneurial action, and notably with respect to entrepreneurs’ inclination to take future actions to pursue a target opportunity.

Wood and McKelvie’s competent synthesis provides an essential step in advancing opportunity evaluation research. Their review not only shows what we already know and what still needs to be studied; it also highlights that when studies are properly integrated, previously assumed philosophical differences in the study of entrepreneurial opportunities need not result in a dividing watershed between different conceptions of opportunities and their evaluation (cf. Alvarez & Barney, 2010 vs. Van Burg & Romme, 2014). When paying proper attention to different levels (i.e., individual versus social), definitions, and empirical approaches, differences can be meaningfully integrated—thus serving to develop a solid body of knowledge that forms a stepping stone for further inquiry on the topic, for which these authors provide substantive suggestions.

THE ROAD AHEAD

Having presented the six papers in this special issue, we conclude this introduction by offering a few of our team’s observations about future research on the affective and cognitive dynamics fostering entrepreneurship. With the benefit of hindsight, it is easy to see that research in this area has come a long way since the debates in the 1980s about the relevance of studying entrepreneurs’ idiosyncratic motives (cf. Carland et al., 1988 vs. Gartner, 1988), or Shaver and Scott’s (1991) patient descriptions of psychology’s fundamental approach to disentangling individual and contextual forces influencing human behaviour. Indeed, we rejoice at observing the proliferation of empirical studies since the

teams of Ron Mitchell and colleagues (2002; 2004; 2007), Robert Baron and colleagues (2004) and Melissa Cardon and colleagues (2012) co-edited topical special issues on cognition or affect in entrepreneurship journals. At the same time, the recent publication of a near 500-page handbook specifically devoted to these topics shows that scholars continue to offer new theoretical developments (Mitchell, Mitchell & Randolph-Seng, 2014). Without a doubt, entrepreneurship research on affect and cognition is alive and well – and continues to hold much promise for future advances.

In this regard, it becomes interesting to contrast the agendas for future research proposed by different reviews. Back in 1999, Forbes essentially suggested to centre future developments on three particular topics, namely: 1) research fostering a better understanding of entrepreneurial alertness; 2) research fostering a better understanding of cognitive differences among entrepreneurs (as opposed to between entrepreneurs and non-entrepreneurs); and, 3) empirical studies fostering a better understanding of the relationships between mental models and concrete actions (see Forbes, 1999: pp. 428-32). Twelve years later, Grégoire, Corbett and McMullen (2011) encouraged scholars to articulate future research around three conceptual axes of development: 1) studying the origins and developments of entrepreneurship cognition; 2) articulating a process orientation; and 3) studying the unfolding of cognition across levels of analysis (see Grégoire, Corbett & McMullen, 2011: p. 1456).

In a healthy sign of maturation, the agendas advocated by the six teams of authors in this special issue integrate substantive topics, theory development, and consequent methodological suggestions. Table 2 presents a synthesis of these different agendas. Seen from the perspective of the road travelled so far, these agendas collectively suggest that research on the affective and cognitive dynamics of entrepreneurship has reached a stage where there is sufficient theoretical and empirical development around substantive topics to warrant more articulate conceptual discussions for the road ahead.

Please insert Table 2 about here

Looking at it from a broad analytical perspective, we offer that three conceptual frames, or metaphors, capture the historical articulation of extant research on the affective and cognitive

dimensions at play in entrepreneurship: these are conceiving affect and cognition as ‘nouns’, ‘adjectives’, and ‘verbs’.² We summarize these conceptual frames in Table 3 below. Needless to say, we readily acknowledge that categorizing nearly four decades of research in such fashion is necessarily reductive. Yet, we surmise that this categorization provides a set of useful ‘frames’ to understand the challenges surmounted in the past, and the opportunities that lay ahead.

Please insert Table 3 about here

Conceiving affect and cognition as ‘nouns’ – or studying the content of entrepreneurs’ hearts and minds

When conceiving affect and cognition as ‘nouns’, one ultimately focuses on the ‘substantive contents’ of peoples’ hearts and minds. *Affects* and *cognitions* thus take centre stage as plural nouns used to represent something individuals *have*. As such, this approach’s fundamental premise is that there should be a relationship between the ‘substantive contents’ of one’s heart and mind—that is the meaning individuals attach to their thoughts and feelings—and their behaviour.

Historically speaking, this metaphorical framing of affects and cognitions as (plural) nouns arguably received the earliest attention within entrepreneurship circles. Because studies of entrepreneurs’ attitudes, perceptions, opinions, motivations and other thoughts and feelings were already common before interest for the cognitive perspective arose among entrepreneurship circles, studying these constructs as cognitively-held representations—as opposed to mere personality dispositions—did not meet as much resistance as the same conceptual revolution might have had among social-psychologists (see Fiske & Taylor, 1991; and Smith, 2000).

Numerous studies were eventually published on the affects and cognitions of entrepreneurs. Among the topics that received the most attention historically, one notes models of entrepreneurial intentions (e.g., Dimov, 2007; Krueger and Carsrud, 1993; Krueger, Reilly & Carsrud, 2000;

² We thank Jeff McMullen and Andrew Corbett for helping to provide the impetus for this metaphor, many years ago.

Thompson, 2009; Zhao, Seibert & Hills, 2005), studies of entrepreneurs' attributions (e.g., Gartner, Shaver & Liao, 2008; Gatewood, Shaver & Gartner, 1995), and studies of the nature and influence of entrepreneurs' mental models, schemas and other rules or scripts (e.g., Hill & Levenhagen, 1995; Mitchell et al., 2000; Radu & Redien-Collot, 2008; Smith, Mitchell & Mitchell, 2009). In similar fashion, many studies documenting the impact of entrepreneurs' affects could be seen as proceeding from the same metaphorical articulation (e.g., Foo, 2011; Foo, Uy & Baron, 2009; Podoynitsyna, Van der Bij & Song, 2012; Welppe et al., 2012).

All in all, research articulated from this angle has shown that the content of what entrepreneurs feel and think can not only influence their decision to engage in entrepreneurial behaviour, but also the persistence of their effort and their ultimate success. This is undoubtedly important—and continues to be so today. For instance, Wood and McKelvie (in this special issue) call for a better understanding of how values (studied as individual-, team- or firm-level cognitions) influence opportunity evaluation.

That being said, it is perhaps not that insightful or unique for affect and cognition research to simply argue—or show—that what people think and feel influences their behaviour. It would seem more insightful to consider how, when and why such cognitions and emotions change. Whether as a function of the entrepreneur's own maturation, of the cohort s/he represents, or of the environment in which s/he acts, entrepreneurs' thoughts and feelings change – and such changes influence entrepreneurial decisions, actions and outcomes. To use the mathematical metaphor of a derivative, cognition and emotions as 'nouns' represent momentary propensities, changing as the action trajectory changes. Seen in this light, the potential of focusing on the substantive content of entrepreneurs' hearts and minds lies not in demonstrating that what people think and feel matters, but in studying the effects of entrepreneurs' affects and cognitions within appropriately defined time-frames—and with a global understanding of how these evolve over time. Yet, the value of focusing on affects and cognitions as nouns is that more than the other articulations (i.e., as verbs and adjectives), this approach zooms in on the actual details of people's cognitive representations (in the form of mental models, cognitive frames or scripts), at a particular point in time (see Baron & Ensley, 2006, but also Cossette & Audet, 1992).

Future research may further drive efforts to fine tune our understanding of such cognitive representations, either through cognitive mapping and associated elicitation techniques, or by drawing on recent methodological advances (such as imaging techniques) in the neuro-cognitive sciences (see also Grégoire & Lambert, 2014; Laureiro - Martínez et al., in press; Martin de Holan, 2013).

Conceiving affect and cognition as ‘adjectives’ – or qualifying the nature of entrepreneurs’ distinctive abilities

A second metaphorical frame for studying affect and cognition starts with the assumption that several of the factors and dynamics influencing entrepreneurial actions are fundamentally ‘located’ in the heart/mind, or at least ‘operate’ in the heart/mind. This is what qualifies these phenomena as *affective* or *cognitive* (both adjectives in this case). From the standpoint of this metaphorical framing, however, it is important to highlight that this approach’s conceptual focus is not on the actual operation of cognitive processes per se, but rather, on the consequences of affective / cognitive variations—be they person-related or process-related.

In entrepreneurship proper, this approach is probably the one that has received most attention in the last three decades, notably to qualify observed differences between entrepreneurs and non-entrepreneurs (or among entrepreneurs). The fundamental premise of such studies is that a host of different task and situational challenges contribute to make entrepreneurial pursuits particularly difficult, straining, or complex. Among their most uniquely defining characteristics, entrepreneurial pursuits routinely involve high levels of information overload, uncertainty, novelty, strong emotions, high time pressures, and fatigue (see Baron, 1998: 278-9). Scholars have suggested that because entrepreneurs arguably face these conditions more often—and with more intensity—than most other people tend to do in their respective profession, capacities or other endeavours, entrepreneurs will tend to exhibit marked affective or cognitive differences vis-à-vis non-entrepreneurs. Many explanations have been proposed for this (see Grégoire, Corbett & McMullen, 2011: p. 1457 and following). Some have argued that entrepreneurs self-select entrepreneurial pursuits because of their affective and/or

cognitive preferences, sense of self or talents for facing such challenges. Other have advanced that enterprising individuals are better equipped to survive such challenges because of some innate affective and/or cognitive abilities or dispositions, or simply come to develop such survival-enhancing abilities as a result of their efforts towards entrepreneurial pursuits. Either way, the net result remains that entrepreneurs will tend to exhibit notable differences vis-à-vis their non-entrepreneurial counterparts, and that research qualifies these differences as *affective* and/or *cognitive*.

A number of studies have investigated such qualitative differences. Among the most-studied variables, one notes differences in intelligence (e.g., De Wit & van Winden, 1989; Hartog, Van Praag, & Van der Sluis, 2010; Van Praag & Cramer, 2001), in decision-making (e.g., Busenitz & Barney, 1997; Keh, Foo & Lim, 2002; Simon & Houghton, 2003; Simon, Houghton & Aquino, 2000) or in the ability/propensity to engage (or not) in counterfactual thinking (Baron, 2000; Marman, Balkin & Baron, 2002) and/or metacognition (Haynie & Shepherd, 2009; Haynie, Shepherd & Patzelt, 2012).

As we noted above, this line of ‘framing’ entrepreneurship research on affect and cognition as an effort to qualify the unique differences of entrepreneurs has received considerable attention. This has undoubtedly been a fertile area of investigation. Interestingly, however, reflecting on why this may be the case raises several implications for future research. First, there is increasing recognition that the distinction between entrepreneurs and non-entrepreneurs is fluid. In this sense, it becomes tricky to rule out (as future entrepreneurs) those currently not engaged in any entrepreneurial pursuits. The logical conclusion here would be that everyone is, potentially, an entrepreneur. This is indeed very difficult to disprove. Lest people readily object that not everyone is a ‘Steve Jobs’, the second implication is that there are varieties of entrepreneurship in terms of scale and impact. In this sense, there is probably more diversity among entrepreneurs than across entrepreneurs and non-entrepreneurs. The third implication is that even if someone lacks any of the requisite ‘adjectives’, they could attract partners with complementary cognitive skills. In this sense, focusing on just one of several team members represents a limitation in research designs.

In response to these challenges, future research intent on qualifying the affective and/or cognitive distinctiveness of entrepreneurial actors might benefit from better contextualizing their variables of interest—for instance by examining particular varieties of entrepreneurship rather than entrepreneurship in general. In addition, scholars intent on pursuing this line of research might find promising avenues in shifting their focus from the individual to the team level, thereby examining the kind of phenomena and dynamics suggested by Mol and her colleagues (in this special issue).

Conceiving affect and cognition as ‘verbs’ – or the entrepreneurial mind in operation

A third metaphorical frame focuses squarely on the ‘thinking and feeling’ dynamics linking affective and cognitive ‘processes’ on the one hand, and behaviour on the other. The fundamental premise of this approach is that if we are to understand human behaviour (and entrepreneurial behaviour in particular), we need to understand how people ‘process’ both the information they receive from their environment (e.g., external stimuli), and/or the information they generate themselves (e.g., knowledge retrieved or constructed from memory, but also feelings, preferences, self concept, goals, motives, needs, etc.). It is in this sense that this conceptual approach focuses on the ‘acts’ of feeling and thinking—hence conceiving of affect and cognition as verbs, something that people ‘do’ (see Dew et al., this volume). As such, this metaphorical articulation is arguably closest to a central element of the cognitive sciences’ epistemological project, that is, to advance understanding of the dynamic interactions between mind and environment (cf. Bruner, 1990; Fiske and Taylor, 2013; Thagard, 2005; Turner, 2001).

Relative to the entire corpus of entrepreneurship research, this focus on the actual operation of affective and cognitive processes is perhaps the one area that has been the most challenging to pursue so far (see Grégoire, Corbett & McMullen, 2011: pp. 1454-5). Among the most salient reasons for this state of affairs might be the breadth of different mental mechanisms, dynamics and processes that could play critical roles at different stages of the entrepreneurial journey (see McMullen & Dimov, 2013; Wood, Williams & Grégoire, 2012). Recent advances in embodied and situated considerations

add further levels of complexity to current efforts to model the dynamics at play in entrepreneurial action (see Dew et al., in this issue; but also Elsbach, Barr & Hargadon, 2005; Harquail & King, 2010; Mitchell, Randolph-Seng, & Mitchell, 2011).

One must also acknowledge the inherent difficulties of operationalizing this interest for the ‘acts’ of thinking and feelings in theoretically-consistent research designs (see Davidsson, 2006). To disentangle the influence of different variables and dynamics whose impact proceeds from different levels of analysis, for instance, one must often leverage data collection methods that place important demands on both participants and researchers (see Grégoire & Lambert, 2014; Grégoire, Shepherd & Lambert, 2010). Furthermore, different affective / cognitive factors of interest exhibit different levels of temporal variability. Whereas emotions, impressions and other preliminary hunches can vary rapidly with changes in attention and circumstances, moods, schemas, and other mental routines and abilities develop over much longer periods of time. As a result, scholars trying to advance understanding of entrepreneurs’ affective and cognitive feats must be able to distinguish between dynamics that unfold differently in time—a challenge that again calls for particular methods and research designs (see Grégoire, 2014).

Interestingly, we note that all six papers in the special issue propose research agendas that encourage future entrepreneurship research on affect and cognition to investigate dynamic interactions between the multi-level antecedents of affect and cognition, the unfolding of affective and cognitive dynamics across time and multiple levels of analysis, and the consequent effects these phenomena may have on entrepreneurship-relevant outcomes. Along these lines, for instance, Delgado-García and colleagues stress the relevance of examining the causal mechanics linking affective phenomena and entrepreneurial outcomes (see p. XX). And for their part, Wood and McKelvie call for studies that investigate the social negotiation between individuals and their potential stakeholders with respect to perceived opportunities (see p. XX).

Although many studies favour an outsider’s perspective for studying affective and cognitive processes (considering process as a series of unfolding events over time; see Langley et al. 2013),

potentially interesting avenues for future research lie in studying such processes ‘from the inside’ – that is, studying how entrepreneurs perceive themselves, their thoughts, feelings, actions and the consequences of such actions over time, and how such dynamics evolve (see Emirbayer & Mische, 1998). Despite frequent and popular allusions to entrepreneurs’ imaginative capabilities (e.g., Casson, 1982; Cornelissen & Clarke, 2010; Stevenson & Jarillo, 1990), for instance, academic knowledge about the processes by which entrepreneurs mobilize their affective and cognitive resources to imagine and explore ‘better futures’ currently remains under-developed (Van Burg, Berends, & Van Raaij, 2014). Likewise, research seeking to unpack the temporal dynamics of entrepreneurial action offers interesting promises (Garud & Giulani, 2013; Garud, Schildt & Lant, 2014).

Needless to say, examining process dynamics ‘from the inside’ poses particular theoretical and methodological challenges. Among the different options possible, it is remarkable that in-depth qualitative studies are absent in many of the topics related to affect and cognition in entrepreneurs (see Wood & McKelvie, this issue). Yet these are not the only methodological options (see Grégoire & Lambert, 2014; Grégoire & Shepherd, 2012). Over and above the choice of a particular data collection and analysis method, the success of process research demands a careful articulation of theory into consequent research designs and measures (Grégoire, 2014).

Moving forward

From our vantage point as co-editors of this special issue, we see the three framing metaphors above as alternative ways of conceptualizing and articulating future research on the affective and cognitive dynamics at play in entrepreneurship. As we mentioned, these framing metaphors broadly follow the historical developments of research in this area, with an initial focus on identifying and objectifying the particular thoughts, feelings and emotions influencing entrepreneurial actions, often in the form of mental models, scripts or representation, and in a noun-like manner. Research that followed this initial stage focused on attributing certain affective or cognitive qualities to entrepreneurs, and this eventually lead to studies seeking to unpack the interactive affective and

cognitive processes fostering entrepreneurial actions—and how such actions influenced such processes in turn.

Interestingly, most of the papers in this special issue referred to such historical turns and tensions, from the focus on cognitive categories (as nouns) to a process orientation (Dew et al., in this issue) and from a strict focus on the (adjective) qualifications of entrepreneurs' cognitive dispositions to a focus on modelling the evolving nature of affective and cognitive states (Hayton et al., in this issue). This observation should not however imply that we see these conceptual frames as separate traditions clearly distinct from one another—and/or with some sort of 'natural', 'logical' or 'normative' progression between them. Instead, we resolutely see these conceptual frames as different 'forms' through which scholars have articulated their interest for the affect and cognition dimensions at play in entrepreneurship. In other words, we see these 'conceptual frames' as connected with one another and as building up to a larger research effort to advance understanding of entrepreneurial actions and its many underlying dynamics.

As such, we argue that rather than looking at these alternative conceptual frames from a normative perspective, the distinctions may be more fruitfully leveraged to better integrate extant research from multiple vantage points. For example, what we have described as noun and adjectival approaches may easily be situated in a process research design, where the focus is exploring the interaction between personal dispositions and prior experience with the demands and feedback provided by a particular environment, and how such interactions potentially change over time.

We also offer that taken together, these different conceptual frames can ultimately enrich our understanding of causality and causal patterns. Noun and adjectival approaches tend to have been pursued through cross-sectional designs, emphasizing causal effects assumed to hold regardless of time. These approaches' also typically focus on establishing linear net effects of causal pathways, with cognitions more or less directly affecting entrepreneurial outcomes. By comparison, process approaches tend to focus on cognition and entrepreneurial outcomes as emergent effects (McMullen &

Dimov, 2013), and thus assume more complex causal couplings between individual entrepreneurs, their cognition and actions, and whether and how these couplings persist or change over time.

In this particular regard, one blind spot in current conceptions of entrepreneurial process is the realisation that it is inherently recursive in nature (Dimov, 2013). That is, it is driven by rules of action and interaction (Venkataraman, Sarasvathy, Dew & Forster, 2012), whereby momentary positional information is processed to formulate action, the consequences of which define new positional information, which in turns informs new action, etc. (Drazin & Sandelands, 1992). The rules in question are largely cognitive and affective in nature. To use a simplifying software metaphor, these rules are tantamount to a programme (algorithm) that converts inputs to outputs, and which takes the output of each stage as the input for the next stage. Recursivity is a powerful process that is sensitive to initial conditions and whilst contingent it is also open-ended in terms of its outcomes; it can be fully deterministic in its operation, yet non-predictable in its outcomes (May, 1976). Given recent discussions of entrepreneurship as an open-ended process, an interesting opportunity lies in better exploring the nature and impact of recursive dynamics in the entrepreneurial process—and the extent to which affective and cognitive processes contribute to such recursive dynamics. These processes can then be studied in terms of their generative power, within the postulates of generative epistemology (Cederman, 2005) and under the mantra that “if you have not grown it, you have not explained its emergence” (Epsten, 2006: 8). For this, such studies can inform the development of computational models, based on advances in agent-based approaches or artificial intelligence, to identify the range of outcomes arising from their recursive application and assess the degree to which such outcomes resemble actual empirical patterns.

PARTING WORDS

In this and other respects, this special issue delivers an overview and integration of important themes within the affect and cognition literature in entrepreneurship. At the same time, it also triggers a number of important questions. Among many pertinent examples, one might ask: How does

entrepreneurship research on bricolage, effectuation, or from the (radical) Austrian view deal with and relate to (underlying) affective/cognitive processes? What learning processes and dynamics underpin entrepreneurial action at different stages? How do enactment and sensemaking processes relate to dominant mainstream frameworks on affect and cognition? What is the nature and role of individual and/or shared affective/cognitive processes in the engagement of potential investors and other resource providers with a focal entrepreneurial effort? What affective/cognitive processes underlie the development of routines in emerging ventures? In view of the rapidly expanding literature on entrepreneurship, it would be interesting to see future review papers taking stock of research efforts to answer these and other similar questions to avoid disintegration of this emerging body of knowledge.

In more immediate terms, the six papers in this special issue each point to opportunities waiting to be seized. In their discussion of situated and embodied perspective, for instance, Dew and colleagues urge us to reconceptualise affect and cognition from an embodied perspective, with potentially significant implications for the field as a whole. Hayton and colleagues call for further research on the role of fear, as a state or experienced emotion, in various stages of the entrepreneurial process, and make the counter-intuitive suggestion that research may besides its negative impact also focus on the potentially positive and enabling contribution of fear to entrepreneurial outcomes. For entrepreneurship research on affect and cognition, Delgado-García and his colleagues encourage further inquiries into the causes and effects of negative affect, on the impact of arousal and appraisal tendencies, on the unfolding of affective dynamics beyond the individual level of analysis, and on the antecedents of entrepreneurs' emotions at different stages of the entrepreneurial process. In their review of entrepreneurship research on intuition for their part, Baldacchino and her colleagues specifically call for scholars to “resolve the ambiguity that remains within the broader intuition literature in terms of how intuition relates to a more conscious, deliberate and analytical mode of information processing (p. XX).” With respect to team cognition, Mol, Khapova and Elfring identify several gaps going forward: identifying the timeframe for the development of entrepreneurial team cognition once a team is formed (p. XX), disentangling how specific types of knowledge structures

interact and affect team outcomes. (p. XX), examine how cultural values affect the emergence of entrepreneurial team cognition (p. XX). Lastly, Wood and McKelvie find that “there is tremendous opportunity to study overlooked variables that seem intuitively salient within the context of opportunity evaluation and have the potential to span from mental models, integration, and congruence (p. XX).”

We largely second such encouragements. From our collective perspective, we rejoice that more and more scholars are explicitly engaged in unpacking the rich array of affective and cognitive phenomena at play in entrepreneurship—and do so by advancing novel and insightful theoretical ideas and leveraging increasingly-sophisticated methodological approaches.

Given the enthusiasm, diligence and insightfulness with which the contributing authors worked on their manuscript, there is no doubt that they should have the final word in this special issue. It is thus with great pleasure and pride that we invite you to read on! We know that somewhere down the road of scholarly efforts to advance understanding of the affective and cognitive dynamics fostering entrepreneurship, our paths will cross again. We look forward to seeing you there.

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TABLE 1**List of arguments motivating the six reviews in this Special Issue**

<i>Authors</i>	<i>Title</i>	<i>Primary motivations for their review</i>
Dew, Grichnik, Haug, Read and Brinckmann	Situated entrepreneurial cognition	Preoccupation with individualistic and static (disembodied) conceptions of entrepreneurial cognition: such approaches fail to describe important facets of entrepreneurial thought and behaviours, and are limited in the face of dynamic and interactive nature of most entrepreneurial phenomena Some emergent work on situated and embodied cognition, but not well organized and only in its infancy
Hayton, Cacciotti, Giazitzoglu, Mitchell and Ainge	Fear and entrepreneurship: Friends or Foes? A review and research agenda	Limited focus on the negative influence of fear, and specifically fear of failure, on entrepreneurial behaviours Distinct and largely unacknowledged conceptualizations of fear Insufficiently informed overall theoretical perspective of fear Need to move from a focus on fear as an objectified stable dispositions to studying how fear is a contextually motivated emotion that may or may not be linked to stable personal factors
Delgado-García, Quevedo-Puente and Blanco-Mazagatos	How affect relates to entrepreneurship: A systematic review of the literature and research agenda	Different / overlapping terms and theoretical models, making conversations among researchers difficult and likely hindering understanding of advances to date Risk of duplicating empirical findings while leaving gaps in our knowledge Emphasis on cognitive consequences rather than the cognitive antecedents of affect Research largely focused on either the early or late stages of businesses (Cardon et al. 2012) Limited theoretical consolidation Limited studying of which cognitive mechanisms mediate the relationship between entrepreneurs' affect and entrepreneurial/venture outcomes
Baldacchino, Ucbasam, Cabantous and Lockett	Intuition in entrepreneurship: A critical analysis and research agenda	Although entrepreneurship scholars have described intuition as the seed of entrepreneurial activity, the specific cognitive construct of intuition has attracted comparatively little attention in entrepreneurship circles The diversity of research questions, theoretical orientations, and methodological approaches, makes it difficult to understand when, why, where, and how entrepreneurs use intuition, and with what effects
Mol, Khapova and Elfring	Entrepreneurial team cognition: A review	The diversity of existing concepts and the ambiguity in the way in which they are operationalized constrain the comparability of findings across studies. The lack of a formal definition of entrepreneurial team cognition hampers theoretical and empirical development
Wood and McKelvie	Opportunity evaluation as future focused cognition: Identifying conceptual themes and empirical trends	Opportunity research is imbalanced as most researchers have focused on opportunity identification and exploitation rather than evaluation Opportunity evaluation research suffers from incomplete theoretical specification of the distinctiveness of opportunity evaluation. Without insight in the unique features of opportunity evaluation theoretical misspecification is likely as well as equivocal Research on opportunity evaluation is fragmented, which could be due to the fact that researcher use different terms to refer to what opportunity evaluation involves

TABLE 2

Summary of research agendas advanced in the six reviews in this Special Issue

<i>Authors</i>	<i>Title</i>	<i>Primary suggestions for future research</i>
Dew, Grichnik, Haug, Read and Brinckmann	Situated entrepreneurial cognition	<p>Take stock of aspects of situated cognition in the entrepreneurial domain (inductive theory building and stock tacking)</p> <p>Develop the articulation of situated cognition within different stages of the entrepreneurial process</p> <p>Develop new methods and research designs amenable to situated cognition research (such as cognitive ethnographies)</p> <p>Link situated cognition variables to other variables of interest in entrepreneurship to scale up to comprehensive theoretical models and explanations</p>
Hayton, Cacciotti, Giazitzoglu, Mitchell and Ainge	Fear and entrepreneurship: Friends or Foes? A review and research agenda	<p>Clarify conceptualizations of fear, and model these different conceptions separately or together as part of empirical research designs</p> <p>Study the role of fear across entrepreneurs, entrepreneurial situations, behaviours and over time</p> <p>Develop better measures that capture fear as both cognitive and affective</p> <p>Extend the analyses to related phenomena such as corporate entrepreneurship and family business</p>
Delgado-García, Quevedo-Puente and Blanco-Mazagatos	How affect relates to entrepreneurship: A systematic review of the literature and research agenda	<p>Expand the facets of affect that are examined</p> <p>Study affective dynamics across levels of analysis</p> <p>Augment research on the antecedents of affect</p> <p>Expand research on the consequences of affect across the entrepreneurial process</p>
Baldacchino, Ucbasarn, Cabantous and Lockett	Intuition in entrepreneurship: A critical analysis and research agenda	<p>Determine the extent / manner to which entrepreneurial intuition may be a specific type of intuition</p> <p>Study the use of intuition alongside analysis and other forms of reasoning</p> <p>Move away from the widely used self-report measures of intuition towards more sophisticated instruments / methods</p> <p>Study relationships between intuition and different forms of experience</p> <p>Study intuition in relation to expertise and deliberate practice</p> <p>Develop elaborate models of the antecedents (and outcomes) of intuition</p> <p>Analyse the role of intuition along all the primary activities associated with entrepreneurship</p>
Mol, Khapova and Elfring	Entrepreneurial team cognition: A review	<p>Identify key properties of the concept of entrepreneurial team cognition</p> <p>Introduce an overarching definition of entrepreneurial team cognition comprising these properties.</p> <p>Analyse how entrepreneurial team cognition interacts with other variables within a comprehensive input-mediator-output framework.</p>
Wood and McKelvie	Opportunity evaluation as future focused cognition: Identifying conceptual themes and empirical trends	<p>Focus on first-person opportunity beliefs in the evaluation of opportunities</p> <p>Study how opportunity-related characteristics and individual configurations fit together in the evaluation of opportunities</p> <p>Study how an individual's mental models and integration are socially negotiated with potential stakeholders</p> <p>Specify better what actions entrepreneurs think about as they develop future-oriented cognitive representations of the possible effects of taking action</p> <p>Study overlooked variables such as motivation and learning in relation to opportunity evaluation</p> <p>Inclusion of multiple cultural contexts and countries is needed to provide insights on the nuances of opportunity evaluation</p> <p>Relate individual characteristics such as education to opportunity viability in different contexts</p> <p>Study the type of opportunity that is being evaluated</p> <p>Study opportunity evaluation as a process rather than as a static event</p>

TABLE 4

Three Metaphors for the Conceptual Articulation of Entrepreneurship Research on Affect and Cognition

Metaphor	<i>Conceiving affect and cognition as ‘nouns’</i>	<i>Conceiving affect and cognition as ‘adjectives’</i>	<i>Conceiving affect and cognition as ‘verbs’</i>
Aims	To study the ‘content’ of entrepreneurs’ hearts and minds to better understand the ‘sources’ / ‘causes’ of entrepreneurial behaviour	To qualify the nature of entrepreneurs’ distinctive abilities in order to better understand the ‘sources’ / ‘causes’ of entrepreneurial behaviour	To examine the dynamic interplay of environment, minds and hearts (and their integration by thinking-and-feeling individuals) in order to better understand the ‘sources’ / ‘causes’ of entrepreneurial behaviour
Relevant examples of elements studied	Documenting the nature (and effects) of: <ul style="list-style-type: none"> - Attitudes - Attributions - Cognitive maps - Emotions and moods - Intentions - Knowledge structures - Mental images and models - Passion - Schemas - Scripts - ... 	Qualifying entrepreneurs’ individual differences in: <ul style="list-style-type: none"> - Intelligence - Decision-making abilities - Perceptual abilities - Reasoning - Counterfactual thinking / experience of regrets - Propensity to leverage metacognition - Self-regulation / regulatory foci - ... 	<ul style="list-style-type: none"> - Studies of how people ‘process’ both the information they receive from their environment (e.g., external stimuli), and/or the information they generate themselves (e.g., knowledge retrieved or constructed from memory, but also feelings, preferences, self concept, goals, motives, needs, etc.). - Studies of how affects, cognitions, emotions, knowledge and thoughts evolve in time, but also with interactions with the physical/social environments; further considerations of how such changes influence behaviour - Studies of retrospective dynamics, i.e., how actions influences / transforms affects and cognitions - ...

FIGURE 1

**Temporal Evolution of Entrepreneurship Research on Affect and Cognition,
as Evidenced in Different Reviews**

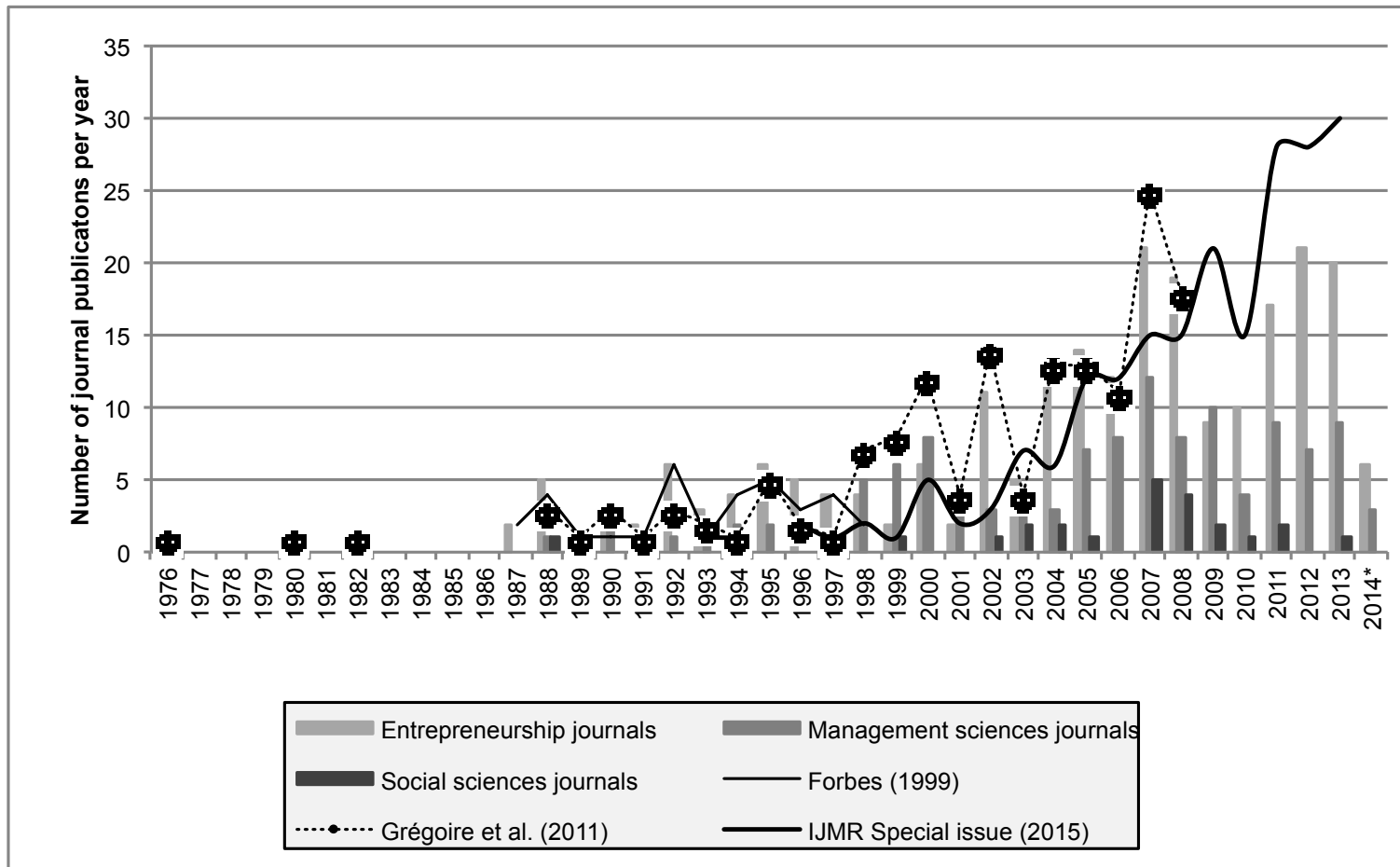


FIGURE 2

Articulation of Entrepreneurship Research on Affect and Cognition over Time

