A round of dancing and then one more: embedding intuition in the ballet of entrepreneurial decision making

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Abstract

The dance metaphor allows us to figuratively depict entrepreneurial decision making processes. Being conventionally conceived of as a sequence of purposeful behaviors rooted in a rational cognition process, entrepreneurial decision making can be featured as a ‘ballet’. This interpretation puts in the background the improvisational nature of decision making, which revokes ‘lindy hop’ as a dance style. The article intends to illuminate the role of intuition, highlighting its overlap with rationality in the entrepreneurial decision making dance. For this purpose, a bibliometric analysis followed by an interpretive literature review advances a comprehensive report of 66 peer-reviewed journal articles published from 1995 to 2019, constructing evidence on the nature of entrepreneurial decision making and on the interplay between intuition and rationality. Literature is categorized in five clusters, which are reciprocally intertwined. Firstly, intuition is unconsciously used as a strategy to deal with the uncertainty that inherently affects entrepreneurial ventures. Secondly, intuition is rooted in the entrepreneurs’ impulsivity, that echoes the role of emotions in decision making. Thirdly, the merge of rationality and intuition improves the entrepreneurs’ ability to keep up with the erratic rhythm of the decision making dance. Fourthly, the mix of intuition and rationality serves as a catalyst of entrepreneurs’ ability to thrive in complex and unpredictable environments. Fifthly, intuition generates drawbacks on entrepreneurs’ meta-cognitive knowledge, which should be carefully recognized. Embracing the dance metaphor, intuition turns out to be crucial to make entrepreneurs able to fill in the gap between rationality and uncertainty.

Keywords Cognition · Decision making · Entrepreneurship · Intuition; Uncertainty

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Introduction and research aims

Decision making processes are the core of entrepreneurial action (Pina e Cunha, 2007). Throughout their business life, entrepreneurs undertake a multitude of interwoven decisions, seeking for opportunities and struggling to capitalize on them through innovation, profitability, and effectiveness (Foss & Klein, 2010; Olson, 1986; Sarasvathy & Berglund, 2010). Decisions have multifaceted and puzzling manifestations in the manifold organization and management challenges that are faced by entrepreneurs (Adel Rastkhiz et al., 2019; Evans, 2019). Formal and informal choices permeate the unfolding dynamics that characterize the creation and development of entrepreneurial ventures (Gustaffson, 2009; Shepherd & Patzelt, 2017). This makes entrepreneurial decision making a complex and dynamic phenomenon, which is wrapped into uncertainty (Choi, 1993). To address such complexity, entrepreneurial decision making should be examined from multiple contexts and functions (Shepherd, 2011), whose integration comes at the cost of conceptual overstretching (Shepherd et al., 2015). This calls for the adoption of a multilevel approach to investigate the inner and deep-seated attributes of entrepreneurial decision making (Aguinis et al., 2011).

Embracing a multilevel slant encourages us to take up different perspectives to shed light on the distinguishing characteristics of entrepreneurial decisions (De Winnaar & Scholtz, 2019). These perspectives put their roots in the acknowledgement that bounded rationality – rather than comprehensive rationality – guides entrepreneurial decision making processes (Simon, 1947). Simplifying, two alternative interpretation of decision making can be identified to unravel the approaches undertaken by entrepreneurs to address their management choices (Michl et al., 2009). On the one hand, a formal, deterministic view assumes that entrepreneurs behave as rational economic agents: it argues that they are steered by mentalism, process orientation, and judgement in undertaking organizational and management decisions (Eisenhauer, 1995; Grégoire et al., 2011). On the other hand, an informal, intuition-based view pretends that entrepreneurs embrace a non-sequential information-processing mode (Sinclair & Ashkanasy, 2005): this involves that they implement involuntary and non-conscious choices in order to address the manifold contingencies that can be retrieved in the entrepreneurial environment (Sadler-Smith, 2016).

Scholars are increasingly aware of the importance of intuition for developing and accomplishing entrepreneurial decisions (Hodgkinson & Sadler-Smith, 2018; Liebowitz, 2020; Sadler-Smith, 2016). However, it is not easy to fully understand what is meant for intuition-based decision making (Caputo & Pellegrini, 2019). This is surprising, since intuition has been argued to represent a distinctive attribute of entrepreneurial behavior (Allinson et al., 2000). In general, intuition can be conceived of as the result of “...*affectively charged judgments that arise through rapid, nonconscious, and holistic associations*” (Dane & Pratt, 2007: p. 40). It represents a source of knowledge which does not rely on rational reasoning and linear analysis (Kickul & Gundry, 2011). Alternatively, it implies immediate apprehension and derives from accumulated personal experience and expertise

(Baldacchino et al., 2015; Evans, 2010). Entrepreneurs who stick to an intuition-based decision making approach are prone to observe and get inspiration from “...cues or signals through unfamiliar and unorganized information that is processed in a synthetic and holistic manner” (Kickul et al., 2009: p. 441).

It is worth noting that intuition should not be understood as a substitute to rationality (Škerlavaj et al., 2016). Indeed, intuition and rationality are concomitantly used by entrepreneurs to achieve a personalized understanding of the reality and to make sense out of the organizational and management challenges (Karp, 2006). From this standpoint, entrepreneurial intuition can be meant as a “...dynamic process by which entrepreneurial alertness cognitions interact with domain competence (e.g., culture, industry, specific circumstances, technology, etc.) to bring to consciousness an opportunity to create new value” (Mitchell et al., 2005: p. 667). In line with these arguments, intuition and rationality can be metaphorically interpreted as two different, but intertwined styles of the decision making dance, concurring to the development of entrepreneurial cognition (Lernerad et al., 2018; Vershinina et al., 2017). Even though it is possible to identify some linear and sequential treads driving the decision making dance, which progresses as a ‘ballet’ governed by deterministic and logic rules, entrepreneurs are willing to subjectively interpret the decision making dance in light of the insights and the cues that they unconsciously collect through intuition, adopting an improvisational, ‘lindy hop’ style (Carland et al., 1996). Subjective interpretations are the origin of inner sensemaking and sensegiving processes, that permit entrepreneurs to contextualize their decision making activities (Matlay & Hannon, 2006). Rationality and intuition jointly develop and overlap over time, nurturing entrepreneurial cognition and inspiring organizational and management choices in the guise of a complex and unfolding dance (Kolbe et al., 2019).

Intuition may enter the decision making dance in a variety of ways, which should be accounted for to have a comprehensive view of entrepreneurial behaviors and actions. Intuition is nourished by the instincts that shape the entrepreneurial mindset and affect the way information is collected and processed to make decisions (Mueller, 2018; Schindehutte et al., 2006). Besides, intuition involves discernment (Traüffer et al., 2010a), that is to say the “...ability to evaluate complex situations and make sound judgments” based on wisdom and on reflective understanding (Traüffer et al., 2010b: p. 177). Both inspiration and divination are constitutive elements of intuition. On the one hand, entrepreneurs’ intuition relies on inspiration (Mooradian et al., 2016). On the other hand, it is exercised through subjective forecasting on future scenarios (Zanakis et al., 2003). Lastly, perspicacity (Pellegrini & Ciappei, 2015) and impulsivity (Wiklund et al., 2019) are two crucial ingredients of the recipe for effective intuition. They underpin the improvisation of entrepreneurs through purposiveness and they facilitate the merge between intuition and rationality to inspire entrepreneurial choices (Brown et al., 2018).

Although scholars have extensively investigated the role of intuition in entrepreneurial decision making and have emphasized its importance in composing entrepreneurial cognition, it is still not clear how the non-rational and improvisational ‘lindy hop’ steps can be incorporated in the linear rhythm that steer the ‘ballet’ of entrepreneurial decision making. The article intends to fill in this gap in literature, providing an answer to the following research questions:

R.Q. 1: How rationality and intuition can be integrated into a harmonious dance to enhance the entrepreneurial decision making process?

R.Q. 2: What are the steps and skills that underpin the entrepreneurs' ability to use intuition in decision making?

By answering these questions, the article intends to advance what we currently know in the field of entrepreneurial decision making, articulating a multilevel understanding of this process which concomitantly relies on the rational steps of the 'ballet' style based on formal cognition and on the improvisational moves of the 'lindy hop' style based on intuition.

Methods

Research design

A mixed research design has been arranged to meet the purpose of this study and provide answers to the research questions. It consisted of a twofold methodology. Firstly, a bibliometric analysis was accomplished to map the state of scientific literature investigating the improvisational and intuition-based nature of entrepreneurial decision making. Secondly, an interpretive literature review was implemented to elicit the research streams examining the interplay between rationality and intuition in entrepreneurial decision making processes. The conjoint use of these two methods allowed us to shed light on the multilevel nature of entrepreneurial decisions and to emphasize the reciprocity of rationality and intuition in nurturing entrepreneurial cognition. This was instrumental to systematize the current knowledge on entrepreneurial decision making according to a critical perspective, identifying some promising avenues for future developments.

In recent years, the influence of bibliometric reports integrated with tailored literature review techniques has achieved a growing popularity among scholars (see, *inter alia*: Caputo, 2013; Marzi et al., 2017). Their unique usefulness for a wide range of research areas, such as management (Podsakoff et al., 2008), entrepreneurship (López-Fernández et al., 2016), innovation (Fagerberg et al., 2012), knowledge management (Fakhar Manesh et al., 2020), and internationalization (Dabić et al., 2019) has been greatly emphasized in management literature. Drawing on similar contributions exploiting the same study design in different scientific domains (López-Fernández et al., 2016; Palumbo et al., 2020), a customized research protocol was designed to conduct the literature review proposed in this article. In line with the twofold nature of the study design, the research protocol was articulated in two steps. The Visualization of Similarities (VoS) technique was used to point out consistencies amongst clusters of scientific contributions and to find homogeneous research streams (van Eck et al., 2006; Van Eck & Waltman, 2007). Then, an interpretive and narrative review was implemented to systematize the retrieved items and make sense out of the clusters (Tranfield et al., 2003).

Literature collection

A comprehensive search on Clarivate Analytics' Web of Science (WOS) Core Collection database was conducted on March, 26th 2020. WOS Core Collection was identified as the primary source for literature collection in light of its robustness and comprehensiveness. Indexing more than 171 million records and more than 34,000 journals, WOS Core Collection is recognized for acquiring the most valuable and highly impactful collection of data for bibliometric studies (Ding et al., 2016; Falagas et al., 2008). A tailored query on the search engine embedded in this citation dataset was designed to assure the inclusion of articles, reviews, and other materials which were consistent with the study purpose. The selection of the research query engaged several iterations on different terms to identify the algorithm that caught as many relevant scientific contributions as possible. The final query, which was developed in light of the conceptual arguments advanced in the introductory section, is reported below:

TS=("Decision mak" OR "Decision-mak*") AND TS=("Entrepr*") AND TS=("Intuit*" OR "Instict*" OR "discern*" OR "Inspirit*" OR "wisdom" OR "divinat*" OR "perspicac*" OR "impression" OR "Irration*" OR "non-ration*" OR "non ration*" OR "impuls*")*

The "TS" operator executed a search of all selected terms within title, abstract, and keywords of records indexed by WOS Core Collection. The research was limited to "articles" and "reviews" as the document type: this permitted us to include only high-quality peer-reviewed manuscripts in this review. Data were refined for "English" as the chosen language, in order to ensure the replicability of the study protocol. Papers published in 2020 were excluded from the analysis to have a consolidated time-frame. As a result, a primary collection of 112 entries was obtained. However, we retrieved a duplicate item, which was removed from the dataset. Hence, a collection of 111 items was submitted to preliminary screening.

Literature selection

All collected items have gone through a manual scanning conducted by the authors independently (Kullenberg & Kasperowski, 2016). Before the individual screening, a meeting was held with the purpose of defining the inclusion criteria to guide the preliminary analysis. Three exclusion criteria were agreed. More specifically, the authors settled to dismiss the items which:

- 1) did not have a clear relationship with our research aims (*i.e.*, records which did not report any focus on entrepreneurship, intuition, and decision making);
- 2) did not contribute in advancing knowledge in the field of entrepreneurial decision making (*i.e.*, records which did not address either the intuition-based or rational nature of entrepreneurial choices); and

3) fell outside the area of entrepreneurship (*i.e.*, off scope records which examined the intuitional or rational nature of decision making processes out of the entrepreneurial field).

Once all authors completed their preliminary screening, a consensus on removing 31 items was achieved. Going more into details, 5 items were off topic, being excluded in light of criterion 1; 16 items were off purpose, being retracted because of criterion 2; and 10 items were off scope, being rejected sticking to criterion 3. The authors did not agree on 19 records. A meeting was held to discuss inconsistencies and achieve a consensus on contested items. During the meeting, all the authors expressed their perspectives about the disputed records. It was decided that the contested items would be rejected if 3 in 4 authors agreed on their exclusion. Similarly, the records would have been maintained if most of the authors agreed on their inclusion. At the end of the meeting, 11 items were dismissed. More specifically, 2 were dropped because of criterion 1), 3 were rejected in light of criterion 2), and 6 were removed according to criterion 3). The refined dataset included 69 relevant and impactful papers.

Bibliometric analysis

A bibliometric analysis was implemented on the 69 items that were considered to be relevant as a result of the preliminary screening. An in-depth examination of the items using activity indicators to demonstrate the information about the volume and the impact of research was executed (López-Fernández et al., 2016). Also, the quantitative evolution of the literature over time was investigated based on the distribution of papers over the years of publication (Volery & Mazzarol, 2015). The *VOS viewer* (vers. 1.6.10) was used to accomplish the core bibliometric analysis. It relied on the visualization of similarity techniques as an aggregation mechanism (Van Eck & Waltman, 2007, 2010). Bibliographic coupling was selected as the aggregation ratio (Kessler, 1963). Bibliographic coupling occurs when two papers cite one or more than one common records in their reference list (Boyack & Klavans, 2010). *VOS viewer* performs this analysis using a matrix that is created through normalizing the co-occurrence of each item's references (Van Eck & Waltman, 2007). The script presents a two-dimensional map including records that are located in accordance to their similarity measures calculated for their references and represented as their x and y axes. The nearer the items are placed, the stronger their relativeness.

Drawing on these data, *VOS viewer* performs a clustering analysis. In particular, it puts items into groups with bigger base of common references. The records grouped in the similar clusters are highly correlated. This indicates a potentially homogeneous stream of research (Van Eck & Waltman, 2010). The results of the cluster analysis pointed out that 66 items were bibliographically coupled. Conversely, 3 items did not show relevant connections with the other records and, therefore, were removed from the analysis. Figure 1 graphically depicts in a flow diagram the whole process of items analysis and selection, describing the process that led us to focus our attention on 66 items out of the 112 items originally collected.

Fig. 1 The flow chart reporting the process of items' collection and analysis

Interpretive review

The last step of the research design was dedicated to the interpretive literature review. As previously anticipated, the VOS aggregation results provided several clusters, which were used as the basis to accomplish a critical systematization of the collected items in order to unravel the dance of entrepreneurial decision making. The authors autonomously delved into the papers included in each cluster to deepen their understanding of the different research streams delivered by the bibliometric analysis.

A manual coding approach was used to systematize the contents of each cluster. Three criteria were used to inspire the individual coding: 1) pinpointing the role of intuition in steering the entrepreneurial decision making process; 2) eliciting the interplay between intuition and rationality in entrepreneurial decision making;

and 3) collecting evidence on the harmonization of intuition and rationality in the dance of entrepreneurial decision making. A meeting was organized to achieve a consensus on the coding approach that inspired the interpretive analysis of the 66 items included in this literature review. In sum, 5 codes were identified, concerning: 1) the interplay between rationality and intuition in entrepreneurial decision making; 2) the triggers of intuition in entrepreneurial decisions; 3) the harmonization of rationality and intuition in the entrepreneurial decision making dance; 4) the advantages brought by intuition-based decision making; 5) the drawbacks generated by intuition-based decision making. At the end of the meeting, the authors attached a label to the clusters that were provided by the VOS aggregation results. A narrative approach was undertaken to arrange a synoptic report of the main themes that characterized the research streams. This allowed us to discuss the major focus of each cluster and to highlight the conceptual connections amongst the clusters, shedding light on the dance of rationality and intuition in entrepreneurial decision making.

Findings

An overview of included items

This literature review relied on a final sample of 66 scientific contributions. Regular articles published in peer-reviewed journal largely prevailed (86.3%). Review articles covered slightly more than a tenth of the sample (12.1%). Only 1 item consisted of a former conference proceeding which was included in a special issue of a scientific journal. More than 40 different venues hosted the records which were examined in this literature review. Among others, the Journal of Business Venturing accounted for a fourth of collected records (19.7%). Moreover, the Academy of Management Perspectives, Creativity and Innovation Management, Entrepreneurship Theory and Practice, the Journal of Business Ethics, the Journal of Business Research, the Journal of Global Entrepreneurship Research, the Journal of Management Studies, the Journal of Product and Brand Management, the Journal of Small Business and Enterprise Development, and Small Business Economics covered a third of the contributions included in this study (33.3%). Business and economics represented the main scientific discipline touched by the collected items (74.2%). Psychology (13.6%), social sciences (7.6%), and engineering (4.5%) followed. The vast majority of the scientific contributions were co-authored by two or more authors (86.4%). Only 9 records were signed by a single author (13.6%).

The publication years ranged between 1995 and 2019. About 4 in 10 records were published in the 5 years preceding the production of this article (39.3%). Only 5 articles were published at the end of the past century (7.6%). A fourth of the records were published in the first decade of the 21st Century (25.8%). Figure 2 visualizes the time distribution of the scientific contributions included in this literature review and highlights the timeliness of the research topic. On average, the items were cited 42 times ($\sigma=71.4$, ranging from a minimum of 0 to a maximum of 369). However, 10 articles did not get any citation at the time of this research: all of them were published between 2018 and 2019, with their freshness explaining lack of citing

Fig. 2 The time distribution of the records included in literature review (n=66)

documents. More than half of retrieved contributions (53%) received at least 10 citations at the time of data collection.

The cluster analysis

Figure 3 graphically outlines the output of the cluster analysis. Citation coupling led to the identification of 5 clusters, which provided different insights into the dance of entrepreneurial decision making. Each cluster consisted, on average, of 13 items ($\sigma=4.5$, ranging from a minimum of 8 items to a maximum of 21 items). The cluster got, on average, 554 citations ($\sigma=430.9$, ranging from a minimum of 262 citations to a maximum of 1,128 citations). The average number of citation was affected by the relative size of each cluster. The cluster composition did not seem to be affected either by the year of publication or by the publication venue.

The green cluster focused on the interplay between rationality and intuition in entrepreneurial decision making. On the one hand, it suggests that intuition is an intrinsic component of entrepreneurial decisions. On the other hand, it highlights that the propensity to rationalize individual and collective choices to make them consistent with organizational procedures squelches the explicitation of intuition-based decision making, banishing it to the tacit side of entrepreneurial decisions. In this perspective, the blue cluster looks at the triggers of intuition in entrepreneurial decision making, stressing the role of impulsivity as a bridge to connect rationality and intuitive thinking. Taking stocks of these consideration, the purple cluster advances the dance metaphor, which understands entrepreneurial

Fig. 3 The visualization of the cluster analysis' output (n=66)

decision making as an unfolding process that requires a balanced mix of styles, such as ballet (rationality) and lindy-hop (improvisation). The red cluster emphasizes the advantages that are brought by the contamination of the deterministic logic that steer the decision making 'ballet' with the 'lindy hop' steps stimulated by unconscious intuition. Lastly, the yellow cluster warns of the drawbacks which are generated by an excessive reliance on intuition and improvisation in the decision making dance. An in-depth analysis of the 5 cluster follows.

The 'Green' cluster: unravelling the interplay between intuition and rationality

Intuition and rationality have been usually conceived of as two dissimilar – and somehow alternative – decision making approaches. Whilst the former focuses on feelings, impressions, and sensations as the triggers of non-linear decision schemes rooted in entrepreneurs' impulsivity and affectivity, the latter emphasizes the importance of rational thinking and analytical tools to process the tangible data and facts that inform entrepreneurial choices (Jahanshahi et al., 2018). The entrepreneurs' willingness to resort to intuitive thinking has been argued to derive from their innate faith in instinct and inspiration, which attenuates their need for rationality (Koudstaal et al., 2019). Such a faith is continuously nurtured by their accumulated knowledge and anticipation skills, which increase the entrepreneurs' reliance on instinct (Nuthall & Old, 2018).

Scholars stress the opportunity to adopt a parallel-competitive account of intuition and rationality, which understands them as two separate, but complementary and intertwined thinking models underlying entrepreneurial decision making (Sadler-Smith, 2016). The main assumption of the parallel-competitive account of intuition and rationality is that entrepreneurs are "...as reliant on inspiration and the skillful management of emotion and intuition, as on cold, calculative cognition" in undertaking strategic and managerial choices (Hodgkinson & Sadler-Smith, 2018: p. 473). However, intuition

and rationality have their own specificities in the entrepreneurial decision making process. Intuition generally acts as a trigger to action in uncertain and unpredictable contexts. Conversely, analytical tools and rational thinking permit entrepreneurs to assess the contents of intuitive choices and to make sense out of them, objectivizing the subtle cues that inspire entrepreneurial decisions and actions (Nandram et al., 2018). Embracing this perspective, the overlapping of intuition and rationality occurs both in the exploration and in the exploitation of entrepreneurial opportunities, contributing to the timeliness and the effectiveness of the decision making process (Matzler et al., 2014a, b). These arguments call for overcoming traditional conceptual models based on the dichotomy between intuition and rationality, espousing a more sophisticated and complex view of entrepreneurial decision making (Hodgkinson et al., 2009) which acknowledges the interplay between intuitive thinking and rational thinking throughout the life cycle of the entrepreneurial venture (Lejarraga & Martinez-Ros, 2014).

Manifold issues have been attached to the encroachment of intuition into rational and linear entrepreneurial decision making processes. The employment of intuitive thinking has been considered to generate a sort of “...*discrepancy between the individual and the organization*”, since non-linear and non-rational schemes may be conceived of as inappropriate for organizational effectiveness (Scheiner et al., 2015: p. 112), ushering irrational and inconsistent considerations in undertaking relevant management choices (Hundsdoerfer & Sichtmann, 2019). Decisions based on intuition may nurture lack of cohesiveness and coherence (Organ & O’Flaherty, 2016). In turn, this may lead to an increase of organizational conflict and clashes, which further incite decision makers to make use of intuitive thinking. Such a circumstance enacts a vicious cycle that impairs decision making effectiveness (Zacca et al., 2017). Since the potential blame which is ascribed to intuition is thought to refrain people from explicitly embracing it in crafting the decision making process (Matzler et al., 2014a, b), targeted interventions are needed to bolster the entrepreneurs’ willingness to exploit intuitive thinking, such as the enhancement of self-efficacy perceptions and the strengthening of tolerance for ambiguity (Blume & Covin, 2011).

The ‘Blue’ cluster: bridging intuition and rationality through impulsivity

Looking for a balance between intuition and rationality is not an easy endeavour. On the one hand, rationality is characterized by a slow, conscious, and deliberative thoughts, that inspire a deterministic decision making process. On the other hand, intuition exploits unconscious mental paths to achieve a rapid and holistic approach to decision making (Huang, 2018). Nevertheless, part of the scientific literature acknowledges the existence of a bridge between rationality and intuition, which enables entrepreneurs to undertake complex and challenging decisions in volatile environments by making use of both analytical thinking and instinct (Neubert & Van Der Krogt, 2019). Merging intuition and rationality is especially useful when entrepreneurs face a turbulent task environment, which is characterized by high levels of uncertainty, rapid changes, limited access to historical data, and unprecedented strategic and management challenges (Centeno et al., 2019).

Nicolau et al. (2019) understood intuition as an associative and contextually dependent approach to information processing, which relies on non-completely

conscious, automatic, and holistic thoughts and embeds a hidden mental process that lies behind the entrepreneurs' knowledgeability. Impulsivity has been argued to act as a trigger to intuition in the entrepreneurial decision making (Wiklund et al., 2019). More specifically, impulsivity determines a sense of urgency and sensation seeking in undertaking managerial choices, involving lack of premeditation and perseverance in shaping the entrepreneurial strategic posture. Since impulsivity is associated with a strong and deeply-rooted overconfidence of entrepreneurs, it may endanger the decision making consistency, upholding rapidity and gut feelings over rational and analytical thinking (Tsai et al., 2018). From this point of view, it has been maintained that impulsivity should be encapsulated into an integrated decision making framework, which carefully blends it with rationality in order to inspire entrepreneurial action (O'Shea et al., 2017). Alongside improving the timeliness of entrepreneurial choices, contaminating impulsivity with rationality curbs the negative implications of impulsiveness on decision making effectiveness, paving the way for an improvement of entrepreneurial performances (Baron et al., 2012).

The mix of intuition-based thinking (which is propelled by impulsivity) and analytical thinking (which is nurtured by rationality) determines several gains for entrepreneurs. Firstly, it enhances the entrepreneurial ability to deal with risky and unknowable managerial issues promptly, charging judgment with both affective and analytical considerations (Huang & Pearce, 2015). Besides, it allows passion to permeate entrepreneurial action and dynamics, thus underpinning the entrepreneurial identity and facilitating the undertaking of managerial choices affected by unpredictability (Galbraith et al., 2014). Thirdly, admitting emotions to edulcorate analytical thinking, it increases the entrepreneurs' propensity to take decisions when unforeseeable prospects are faced (Mitteness et al., 2012).

The 'Purple' cluster: the styles of the intuition and rationality dance

Portraying the entrepreneurial decision making process through the dance metaphor, rationality and intuition can be visualized as two different, but complementary dance styles, which follow the rhythms and mould the shapes of managerial choices. Far from generating cognitive misfit, interweaving the steps of intuition and rationality enhances the scope of decision making, setting the conditions for increased organizational performances (Brigham et al., 2010). Intuitive thinking is embedded into the posture and orientation of entrepreneurs, accounting for the impulsivity and affective judgements of decision makers, who are unconsciously oriented to stick to a lindy-hop, improvisation-based dance style. Alternatively, rational thinking resides into the organizational capabilities of the firm and epitomizes the processing information abilities developed by entrepreneurs over time, which accustom them to adopt a ballet style, based on formal rules and protocols (Chaston & Sadler-Smith, 2012). Intuitive thinking boosts an increased speed of action, allowing to overcome anxieties and worries related to decision making in challenging circumstances (Wiklund et al., 2017). Rational thinking pinpoints the entrepreneurs' effectiveness in planning, evaluating, allocating, and using available resources, sustaining the organizational growth of the entrepreneurial venture (Kickul et al., 2009).

It is not easy to shed light on the interplay between intuition and rationality in the entrepreneurial decision making process and to discriminate the steps that are inspired by intuition from those that accommodate the quest for rationality (Ferreira et al., 2015). However, literature is consistent in arguing that intuitive thinking is more fitting when time-dependant decisions have to be undertaken in highly volatile settings (Blanco-Mesa et al., 2018). In these circumstances, the lindy-hop, intuitive style addresses the flow of the decision making dance according to the entrepreneurs' intuition and impulsiveness (Khursheed et al., 2019). Rational thinking conducts the decision making ballet until a turnaround of the task environment or of contingent variables requires a change in the flow of the dance, which calls for postponing analysis to impulsivity (Krasniqi et al., 2019).

The 'Red' cluster: the strengths of (un)conscious intuition

In general, intuition and rationality can be understood as the opposite poles of a continuum. Far from representing alternative and incompatible approaches to entrepreneurial thinking, they are either consciously or unconsciously blended by entrepreneurs in implementing effective decision making processes (Minkes & Foxall, 2003). Intuition-based thinking seems to prevail during the early stages of the entrepreneurial venture, whilst the decision making process turns towards cognition and rationality over time, to support the growth stage of the firm (Berends et al., 2014). This is consistent with a behavioral preference of entrepreneurs towards effectuation at the launch of their entrepreneurial idea and with their cognitive preference towards causation throughout the growth and the development stages of the entrepreneurial venture (Agogu et al., 2015).

Different factors can be argued to underpin the entrepreneurs' propensity to rely upon intuition in making strategic and management choices. Among others, the peculiar characteristics of the domain faced by entrepreneurs may foster the adoption of intuitive thinking (Ramadani et al., 2018). This is especially true when entrepreneurs act in complex and turbulent environments, which put under stress the entrepreneurial action and require rapid and timely decisions (McKelvie et al., 2011). The type of educational activities experienced by entrepreneurs to enhance their management capabilities are likely to affect their decision making processes, with experiential learning experiences stimulating intuition (Bissola et al., 2017). Similarly, several personality traits, such as introversion and unconscientiousness, may trigger an intuitive model of decision making (Hensel & Visser, 2019), encouraging entrepreneurs to draw on past experiences and on individual knowledge to steer relevant management choices (Wood & Williams, 2014).

The conscious inclusion of intuition in the rationality-based process that inspires entrepreneurial decisions paves the way for several gains. Inciting entrepreneurs to embrace a substantial rationality in making decisions, which recognizes that many "*...acts or thoughts are driven by impulses, wishes and/or feelings*", intuition boosts the entrepreneurs' responsiveness to take timely choices in hardship produced by managerial crisis (Vershinina et al., 2017: p. 159). Intuitive thinking tacitly adds

non-linear and recursive paths in the strategic sensemaking process enacted by entrepreneurs, contributing to the improvement of their effectiveness to rapidly scan and interpret the external environment (Samdanis & Lee, 2019). In addition, intuition nourishes the entrepreneurs' perspicacity, which is crucial to thrive when consolidated protocols and rules in managing the entrepreneurial venture are broken by unpredictable challenges (Pellegrini & Ciappei, 2015). Finally, yet importantly, it allows entrepreneurs' positive emotions to enter the decision making process, enriching rational thinking schemata with affective elements (Zhu, 2016) and boosting stakeholders' idiosyncraticity in assessing entrepreneurs' strategic and management decisions (Murnieks et al., 2011).

Previous research has stressed that the use of intuitive thinking pushes the individual drive towards entrepreneurship (Armstrong & Hird, 2009). Beyond accounting for the unique risk preferences and strategic options that characterize the entrepreneurial life (Scherpereel, 2008), intuition and impulsiveness inspire the managerial decisions that are targeted to business growth, fuelling the entrepreneurial spirit (Julien, 1995). In particular, intuitive thinking permits entrepreneurs to overcome the frame of references that rationally steer decision making processes (Palich & Bagby, 1995) and endows them with the ability to abstractly collect, process, and use available information using complex interpretive and cognitive approaches, which prevent information overload and avoid decisional ambiguity (Mosakowski, 1998).

Summarizing these considerations, it is not surprising that the exploitation of intuition in entrepreneurship has been related to manifold positive outcomes, including enhanced creativity and innovation, increased discerning of management challenges, more efficient decision making, and greater consistency with the desire of autonomy perceived by entrepreneurs (Mitchell et al., 2005; Carter, 2011). Actually, the adoption of intuitive-based decision making models has been found to pave the way for positive financial and non-financial performances, regardless of the degree of environmental uncertainty faced by entrepreneurial ventures (Sadler-Smith, 2004).

The 'Yellow' cluster: the drawbacks of intuition on cognitive learning

Even though intuition is increasingly acknowledged as an essential part of the entrepreneurial decision making process and its contribution to solve optimization problems in highly complex and dynamic situations has been argued (Lévesque & Schade, 2005), literature quarrels over the manifold implications that can be generated by the encroachment of intuition into rational decision making. Hence, whilst intuition challenges the conventional wisdom that inspires research and practice in the field of entrepreneurial decision making (Janney & Dess, 2006), a factual shift from rational thinking to wise thinking is still far for coming (Dunham, 2010).

The inclusion of intuition in the entrepreneurial decision making process engenders several side effects, which have negative implications on the entrepreneurs' meta-cognitive learning process. Intuition has been considered to foster a reactive approach to decision making, inciting entrepreneurs to emotionally reply to external stimuli (Estelami

& Nejad, 2017). Intuition-based decision making may nurture the natural overconfidence of entrepreneurs in implementing strategic and managerial choices, preventing a careful appraisal of risks and limits of their knowledge (Robinson & Marino, 2015). From this point of view, intuitive thinking leads to overlook the importance of regret in shaping entrepreneurial decisions, *i.e.* the entrepreneurs' natural propensity to compare the actual situation with pre-decision stage (Liang et al., 2018). Intuitive decision making processes feed a false sense of security in personal capabilities (Zacharakis & Shepherd, 2001), which is further exacerbated by its limited reliance on entrepreneurs' social skills, which are crucial for effective decision making in highly volatile and risky entrepreneurial contexts (Baron & Markman, 2000). Lastly, an excessive focus on intuition may halt the entrepreneurs' introspective learning process and determine a lack of insight (West III & Meyer, 1998). This entails a conscripted thinking, which is based on decision makers' past experiences and does not benefit from alternative perspectives (Zacharakis & Meyer, 1999).

These potential shortcomings stimulate a need for combining the use of intuition with structured approaches intended to gauge the quality of decision making processes. Embedding intuition in a more structured decision making model permits entrepreneurs to achieve an increased awareness of the multifaceted implications of intuitive thinking on management choices, thus informing the dance between rationality and intuition in shaping entrepreneurial behaviors and actions (Cowlrick et al., 2011).

Discussion

Unfolding the dance of entrepreneurial decision making

Table 1 includes an overview of the study findings, summarizing the key contents of the five clusters that were analyzed in this research. The evidence collected from the interpretive literature review suggests that intuition and rationality should not be understood as two alternative and inconsistent decision making styles (Gani et al., 2020). Even though recent studies have argued the superiority of analytical and rational thinking over affective decision making approaches (Camuffo et al., 2020), intuition and rationality represent two coexisting shades of the entrepreneurial decision making process (Baldacchino, 2019). They account for both the technology of reason and the technology of foolishness, which are strictly intertwined in managing and organizing entrepreneurial ventures (Jacobs & Statler, 2006; March, 1979). On the one hand, nonlinear thinking acknowledges the role of emotions, impulsiveness and passion in upholding the entrepreneurial orientation, thus inspiring affectively consistent strategic and management decisions (Larsen, 2020). On the other hand, rational and deliberative thinking fosters the entrepreneurs' ability to handle the challenges that arise from the growth of the entrepreneurial venture (Zollo et al., 2020). They mould entrepreneurial decisions via analytical reasoning and calculative logics, drawing on organizational capabilities and information processing skills developed by entrepreneurs over time (Morales Burgos et al., 2020).

Table 1 An overview of the research items' clusterization

Cluster	Main theme	Key contents	Key references
Green Cluster	The interplay between intuition and rationality	A parallel-competitive account of intuition and rationality should be undertaken to inform the entrepreneurial decision making. It understands intuition and rationality as two separate, but complementary and strictly intertwined thinking approaches underlying entrepreneurial choices. Whilst intuition acts as a trigger to action in uncertain and unpredictable contexts, analytical tools and rational thinking permit to assess intuitive choices and to make sense out of them, objectivizing the subtle cues that inspire entrepreneurial decisions and actions	Hodgkinson et al., 2009; Hodgkinson & Sadler-Smith, 2018; Nuthall & Old, 2018
Blue Cluster	Impulsivity as a bridge between intuition and rationality	The merge of intuition and rationality is especially useful when entrepreneurs face high levels of uncertainty and/or unprecedented management challenges. Impulsivity acts as a trigger to intuition. More specifically, impulsivity paves the way for a sense of urgency and sensation seeking in undertaking managerial choices, involving lack of premeditation and lack of perseverance in shaping the entrepreneurial strategic posture. The mix of intuition-based thinking, which is propelled by impulsivity, and analytical thinking, which is nurtured by rationality, facilitates the undertaking of managerial choices affected by uncertainty and unpredictability	Huang, 2018; Huang & Pearce, 2015; Wiklund et al., 2018

Table 1 (continued)

Cluster	Main theme	Key contents	Key references
Purple Cluster	The styles of the intuition and rationality dance	Far from generative cognitive misfit, rationality and intuition can be conceived of as two different, but sequential dance steps, which dictate the rhythms and mould the shapes of managerial choices. Intuitive thinking boosts an increased speed of action, allowing to overcome anxieties and worries related to decision making in challenging circumstances. Rational thinking pinpoints the entrepreneurs' effectiveness in planning, evaluating, allocating, and using available resources	Blanco-Mesa et al., 2018; Kickul et al., 2009; Wiklund et al., 2017
Red Cluster	The strengths of intuition	Inciting entrepreneurs to undertake a substantial rationality in making decisions, intuition boosts the entrepreneurs' ability to make timely choices in hardship. Moreover, intuitive thinking tacitly adds non-linear and recursive paths in the strategic sensemaking process enacted by entrepreneurs, contributing to the improvement of their capability to rapidly scan and interpret the environment. Lastly, intuition nurtures the entrepreneurs' perspicacity	Samdanis & Lee, 2019; Berends et al., 2014; McKelvie et al., 2011

Table 1 (continued)

Cluster	Main theme	Key contents	Key references
Yellow Cluster	The drawbacks of intuition	Intuition fosters a reactive approach to decision making, inciting entrepreneurs to emotionally reply to external stimuli. Moreover, it feeds the natural overconfidence of entrepreneurs in undertaking strategic and managerial choices, preventing a careful appraisal of risks and limits of individual knowledge. Lastly, intuition overlooks the importance of regret in shaping entrepreneurial decisions and entails a conscripted thinking, which prevent meta-cognitive learning	Zacharakis & Meyer, 1998; Baron & Markman, 2003; Dunham, 2010

Scholars have claimed that a dialectic dynamic characterizes the encounter of intuition and rationality in entrepreneurial decision making (Bratnicki & Ząbkowska, 2009). This approach has encouraged scholars to embrace a paradox lens in unraveling the interplay between intuition and rationality, which stresses the contradictory elements of nonlinear thinking and analytical reasoning, but overlooks their interdependency (Calabretta et al., 2017). The results of this literature review contrast the dialectic perspective and propose an alternative view, which acknowledges the complementarity of rationality and intuition (Vershina et al., 2017). This is consistent with the assumption that: “...the combination of formal analysis techniques and intuitive judgments (where those judgments are enabled through the presence of EESs) may be the optimal approach to entrepreneurial decision making” (Blume & Covin, 2011; p. 149).

Intuition is an unavoidable component of the entrepreneurial decision making process, which either consciously or unconsciously intrude into the cognition of entrepreneurs, fostering their ability to undertake timely, yet deeply sedimented strategic and management choices (Jutidharabongse et al., 2020). The entrepreneurs’ willingness to resort to intuition takes its roots into the individual intellectual capital which is accumulated from past experiences (Baldacchino et al., 2015). Previous entrepreneurial activities pinpoint the expertise and the self-efficacy perceptions of entrepreneurs, which trigger a greater use of intuition in decision making (Baron & Ensley, 2006). Intuitive thinking requires a preference for improvisation, which concurs in nurturing the centrality of passion and emotion in informing decision making processes (Bradley, 2010). Besides, it embodies a predilection for impulsiveness (Brown et al., 2018), which incites to thrive in volatile and uncertain environments (Wiklund et al., 2019). Lastly, yet importantly, intuition is boosted by positive personal sensations of entrepreneurs, representing an innate component of the entrepreneurial spirit (Nandram, 2016).

Every effort intended to curb intuition to privilege a linear and analytical thinking approach is likely to hamper the effectiveness of the entrepreneurial decision making process, be it implemented by an individual agent or by a group (Wang et al., 2020). Intuition and rationality should be carefully balanced to synergistically benefit from their advantages and to minimize backlash on the effectiveness of entrepreneurial choices produced by a one-sided, partial approach to decision making (Organ & O’Flaherty, 2016). Sacrificing intuition on the altar of rationality is thought to undermine the entrepreneurs’ ability to timely frame the competitive challenges they have to overcome in order to ensure the success of the entrepreneurial venture (Emami et al., 2020). Moreover, it paves the way for a detrimental delay in making appropriate organizational and management choices, which puts the viability of the entrepreneurial venture under stress (Acciarini et al., 2020).

Such a balance can be achieved by merging intuitive thinking and computational logic in a harmonious dance of decision making, which recognizes both the need for analysis and the importance of sub-conscious feelings in shaping entrepreneurial choices (Fomin et al., 2016). The dance metaphor is particularly effective in depicting the interplay of intuition and rationality: it assumes that neither intuitive thinking is able to eclipse rationality, nor that the computational logic squelches emotions and gut feelings (Hodgkinson & Sadler-Smith, 2018). On the opposite, it postulates

that intuition and rationality are deeply entangled in the decision making process, informing the steps that lead to the development of entrepreneurial choices (Sadler-Smith & Shefy, 2004). Entrepreneurs should get accustomed to different styles when initiating a decision making dance: alongside sticking to the linear and rigorous steps that are typical of the traditional ballet style based on rationality, they should acknowledge and enhance their ability to improvise and to exploit their intuition according to a flexible, lindy-hop style (Jutidharabongse et al., 2020). Whilst nonlinear and intuitive thinking is appropriate to deal with issues that are affected by unpredictability and uncertainty, rationality permits to address the complexity and the intricacy of entrepreneurial decisions (Acciarini et al., 2020).

In line with these considerations, intuition and rationality should be conceived of as two distinct, but complementary steps of the entrepreneurial decision making dance, which should be harmoniously coordinated to enhance the effectiveness of strategic and management choices (Sadler-Smith, 2016). It is worth noting that the blend of intuition and rationality in the entrepreneurial decision making dance can be prevented by the side effects that are related to an excessive use of nonlinear schemes based on instinct and impulsiveness (Tsang, 2004). The unstructured and unbalanced employment of intuition may pave the way for conscripted thinking, which has major negative effects on the entrepreneurs' ability to nurture their meta-cognitive knowledge (Palumbo, 2016; Zacharakis & Meyer, 1999). This calls for a precautionary approach in unfolding the dance of intuition and rationality, avoiding that an excess of intuitive thinking may arrest the structuration of the decision making process, thus undermining the meta-cognitive learning abilities of entrepreneurs (West III & Meyer, 1998).

Study limitations

Some limitations affected the reliability of the study results. The use of a unique citation database as the source of items included in this literature review constrained the depth and the comprehensiveness of this research. Nevertheless, WOS currently represents the world's most trusted publisher-independent global citation database, indexing more 171 million records across different disciplines and scientific fields. From this point of view, it is possible to maintain the exhaustiveness of our research design. Moreover, the use of an interpretive approach to systematize the research findings may have triggered subjective biases in the reporting of the study results, which affected the consistency of this article. However, the interpretive approach allowed us to shed light on the interplay between intuition and rationality, providing some new insights into the dance of entrepreneurial decision making. Lastly, the focus on articles and reviews published in journals adhering to the double peer-review rule reduced the breadth of our review. This decision was consistent with the purpose of including only certified knowledge in this study, in an attempt to increase the dependability of the research findings. From this standpoint, it can be maintained that the exclusion of conference proceedings and book chapters did not significantly impaired the consistency of our study.

coordination between these two styles is contingent and reliant on the peculiar orientation of entrepreneurs towards their task environment.

More recently, an increasing attention has been paid to entrepreneurial spontaneity in undertaking strategic and management choices. Spontaneity results from the individual propensity to prefer intuitive thinking over rational analysis. However, an excessive reliance on intuition may come at the cost of cognitive misfit and erratic decision making, that are not consistent with the need for rationalization to sustain the continuous growth of the entrepreneurial venture. Tailored initiatives should be implemented to ensure the balance of intuition and rationality in entrepreneurial decision making, avoiding that improvisation may crowd out rationality, making the decision making dance goofy and uncoordinated.

Additional research is needed to unravel the dance of intuition and rationality in the entrepreneurial decision making and to better understand how rigour and improvisation can be balanced to foster the timeliness and the appropriateness of entrepreneurs' management choices. Firstly, further empirical studies are required to identify the decision making tools and techniques which are more effective in merging intuitive thinking and rational analysis to address the competitive challenges faced by entrepreneurs. Such studies should be established on the assumption that intuition and rationality are concomitantly required in the recipe for effective decision making processes. Intuition and rationality should be carefully balanced to minimize drawbacks on entrepreneurial choices that derive from the crowding out effect that the former may produce on the latter, impairing the meta-cognitive learning process experienced by entrepreneurs.

In line with these considerations, more attention should be paid to the backlash that arises from a blind and faithful reliance on intuition in accomplishing relevant entrepreneurial decisions. Recognizing these drawbacks will provide with further evidence about the need for merging intuition and rationality in a harmonious decision making dance, which balances order and improvisation. Lastly, yet importantly, both conceptual and empirical advancements are needed to better understand the implication of the intuition and rationality dance on the entrepreneurs' meta-cognitive knowledge. Mixing rational analysis and intuitive thinking in making entrepreneurial decisions may trigger the accumulation of advanced decision making skills which are rooted in combination of rational cognition and affective cognition. This adds to the entrepreneurs' ability to thrive in domains characterized by complexity and unpredictability, compounding the swiftness of intuitive thinking with the accuracy of rational thinking.

Conclusions

The article proposes an original understanding of entrepreneurial decision making, assimilating it to a dance and conceiving rationality and intuition as two different styles that can be adopted to perform the dance. Rationality resembles the ballet style, relying on formal rules and determinism to inspire entrepreneurs' actions and behaviors. Intuition is more consistent with a lindy-hop style, that intends to

exploit improvisation and creativity to increase the entrepreneurs' responsiveness to external contingencies. Far from representing two alternative and irreconcilable approaches to undertaking management choices, rationality and intuition should be conceived of as two intertwined styles, that should be wisely harmonized in the decision making dance. An imbalance towards rationality may impair the timeliness and adaptability of entrepreneurial decision making, making it not consistent with the environmental turbulence that is faced by entrepreneurs. On the other way round, a preponderance of intuition may hinder the entrepreneurs' ability to learn from past experiences and to nurture their analytical capability to appreciate management challenges and to effectively address them.

The study contribution is twofold. From a conceptual standpoint, it stresses that a never-ending and evolving relationship enlaces intuition and rationality in entrepreneurial decisions. Choices undertaken by entrepreneurs are deeply influenced by emotional and affective triggers, which are especially useful to avoid decisional stagnation when issues characterized by unpredictability and uncertainty are faced. At the same time, they are informed by analytical and rational calculations, which allow entrepreneurs to handle complex and controversial entrepreneurial challenges. Far from proposing a dual process perspective which maintains the alternation of intuition and rationality, with the former being more fitting with exploration and the latter to exploitation, a complementarity view is advanced, which finds its manifestation in the dance metaphor.

From a practical point of view, the study findings warn of the drawbacks which are generated by an unbalanced use of intuition and rationality in entrepreneurial decision making. Privileging intuition over analytical thinking may impoverish the entrepreneurs' meta-cognitive learning experience, preventing them from capitalizing from past experiences. Conversely, the focus on rationality is thought to hamper the timeliness of management choices, undermining the growth of the entrepreneurial venture. The dance of intuition and rationality should be constantly preserved throughout the life cycle of the entrepreneurial venture, adjusting the nonlinear and linear steps to the rhythms of the strategic and management contingencies faced by entrepreneurs.

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