Organizational resilience and the entrepreneurial firm
Guest Editors: Martie-Louise Verreyne, Marcus Ho, Martina Linnenluecke

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Guest editorial

Editorial for the special issue on: organizational resilience and the entrepreneurial firm

Introduction
The topic of resilience has sparked a growth in scholarly attention and interest in recent years (van der Vegt et al., 2015). Resilience has been recognized as a critical factor in the entrepreneurial process, with increasing evidence to suggest that it plays a part in successful entrepreneurial outcomes (Bullough et al., 2014; Corner et al., 2017; Linnenluecke, 2017). Research on entrepreneurial resilience lends itself to a focus on the individual level of analysis (i.e. the individual entrepreneur and their endeavors to succeed) (Corner et al., 2017), but conceptual and empirical studies also point out that it is important to examine how entrepreneurial resilience is enacted within larger organizations and contributes to community-level resilience (Korber and McNaughton, 2017; McKnight and Linnenluecke, 2016; Williams and Shepherd, 2016). These emergent perspectives demonstrate that the value and scope of resilience for entrepreneurship can be productively applied to understanding processes and outcomes of entrepreneurship, in addition to providing prescriptions for management and business in general.

Organizational resilience, the capacity to respond, adapt and transform in response to sudden adverse events, is often seen as a desirable characteristic for organizations seeking to prepare, recover, and adapt in the face of crises, shocks and other adverse events (Kantur and Iseri-Say, 2012; Linnenluecke and Griffiths, 2010; Sutcliffe and Vogus, 2003). The capacity to process significant setbacks appears to be of particular importance for entrepreneurial firms, most of which face far reaching consequences from internal crises and external shocks, including resource depletion, productivity changes and employee stress, to name a few (Gill et al., 2012; Graham, 2007). However, while organizational resilience seems to be accepted as an essential characteristic in many firms facing uncertain conditions (e.g. Bhamra, 2016; Sutcliffe and Vogus, 2003), there is still limited research that examines how organizational resilience emerges in the entrepreneurial firm.

Can resilience explain how small and entrepreneurial firms survive through adversity and thrive against the odds? Despite the promise of organizational resilience, questions remain as to its specification of constructs and variables, conceptual relationships and dynamic boundaries (see e.g. Bhamra et al., 2011; Linnenluecke, 2017; Linnenluecke and Griffiths, 2015; Mamouni Limnios et al., 2014; van der Vegt et al., 2015). Several factors motivated our original special call for research examining resilience in entrepreneurial firms. First, the impacts of disasters have prompted researchers to comment on the importance of understanding the context and process of resilience and flourishing in small- and medium-sized enterprises (SMEs) (Bhamra, 2016; Doern, 2016; Parnell, 2015) to cope with uncertainty and environmental disruption (Fowler et al., 2007). Additionally, there is limited research focusing specifically on entrepreneurial resilience, the response of SMEs’ internal crises and external adversity (Doern, 2016; Herbane, 2010), and how resulting impacts relate to organizational recovery, responses and, ultimately, its resilience.

In addition, the growing literature on organizational resilience highlights a proliferation of constructs and definitions, indicating a dynamism for the topic.

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However, despite the advances in research examining resilience, research remains fragmented, which has been leading to conceptual and foundational confusion and difficulties with applying the concept in other research fields, such as entrepreneurship (Linnenluecke, 2017; McNaughton and Gray, 2017). As such, it is time to take stock of the existing literature and to examine methods for advancing the conversation toward conceptual certainty and multi-disciplinary integration of resilience and entrepreneurship (Bhamra, 2016; Kantur and Iseri-Say, 2012; Lengnick-Hall et al., 2011; Linnenluecke, 2017; Sutcliffe and Vogus, 2003). Finally, we note that methodological and empirical evidence is required to advance any field. How to best measure and assess the presence or absence of resilience is a challenging question, also given the multi-dimensional nature of the concept. In this special issue, we set out to address some of the limitations described above by presenting scholarly research on organizational resilience in the entrepreneurial context.

**Overview of special issue**

We begin our special issue by examining the meaning and conceptualization of resilience for entrepreneurial firms. The first paper by Korber and McNaughton (2018) looks at the literature at the intersection of resilience and entrepreneurship and identifies six scholarly conversations on the topic. The authors use a systematic review process to identify the most important papers to guide the analysis, which points to organizational resilience as traits of firms or individuals; a trigger for entrepreneurship, an outcome of entrepreneurship and as impacting on failure, recovery and transformation. Importantly, the authors identify avenues for future researchers to incorporate research from other fields to ensure a more informed and nuanced investigation of the role of entrepreneurs in promoting a sustainable socio-ecological system.

The second paper by Manfield and Newey (2018) draws on resilience conceptualizations from three disciplines, namely, psychology, ecology and engineering, to identify a number of key insights into how organizations can enact entrepreneurial resilience under different conditions. This paper identifies a capability portfolio that enacts either routine or heuristic-based responses, depending on the severity of the threat. The severity of threats is identified through an absorption threshold point, which guides firms to switch between different resilient capabilities. As such, this paper directs firms to develop a broader range of resilience capabilities to be able to address different levels of environmental uncertainty.

The third paper by Morais-Storz et al. (2018) views resilience as a strategic concept, something that organizations can build deliberately and proactively to create value. It focuses on the role of metamorphosis and innovation to show that resilience goes beyond maintaining the status-quo or purely adapting to environmental uncertainty, to move organizations to a new position where they can shape the future. These second and third papers mostly focus on resilience as a firm-level construct, something that can be embedded in the culture of the organization. Organizations can develop capabilities to embed and use resilience (Manfield and Newey, 2018), or can be strategic in its development and use of resilience (Morais-Storz et al., 2018).

The fourth paper by d’Andria et al. (2018) identifies emotional and cognitive dimensions of managerial definitions, and examines how they connect to causation or effectuation as logics of actions as an entrepreneurial project unfolds. This paper focuses on the resilience exhibited by an individual entrepreneur through the long and arduous process of business takeover to overcome adversity. Its use of a blog presents an interesting take on narrative analysis. Still looking at the individual entrepreneur, paper 5 (Martinelli et al., 2018) uses data from retail entrepreneurs impacted by the Emilia earthquake in the north of Italy. It evaluates the role of social capital and dynamic capabilities in supporting resilient action before, during and after the earthquake.
We wrap this special issue up with paper 6 (Branicki et al., 2018), which uses qualitative data from small UK firms to build a multi-level model of entrepreneurial and organizational resilience in SMEs. The contribution that SMEs make to the economy, their vulnerability, and as home to start-ups and their entrepreneurial founders enable this paper to show how entrepreneurial and SME resilience interact to improve survival during crises.

Toward a future research agenda
The special issue articles, together with our reading of the wider literature, point to an evolving, but, to date, an immature field of research. Much like previous reviews in the area (Bhamra et al., 2011; Linnenluecke, 2017), we find that organizational resilience remains multi-dimensional, with diversity in conceptualization, and multi-disciplinary, in its provenance and approach. However, while this multi-dimensionality and diversity may complicate matters, there are silver linings to be found among scholars. In contrast to individual conceptualizations of organizational resilience as a capacity or response, organizational resilience is concerned with capabilities associated with strategic readiness or competitive or environmental dynamics, social and professional norms, and a plethora of behaviors and organizational processes required to actualize the changes or adaptations required (or forced unto the organization). Within this literature, the organizational process and resources, entrepreneurial and managerial agency, and social structures and relations are implicated as critical to organizational resilience. We note with optimism that our papers have recognized these inherent qualities; however, these advances must be balanced with caveats of limitations as well. We note here some issues of importance, two theoretical and one methodological, and how they create challenges and opportunities for future research.

The first challenge relates to how resilience is studied in connection to other concepts, such as the potential antecedents and outcomes of entrepreneurial success in adverse consequences. Empirical research suggests, for example, that responding to adverse events depends on entrepreneurial leadership (Ayala and Manzano, 2014; Battisti and Deakins, 2011), and the ability to mobilize the organization’s resources, capabilities and employees (Lacho and Eness, 2011; Spillan and Hough, 2003). These structural moderators can extend outside the organization to include networks and other forms of community participation. For example, entrepreneurial responses in the aftermath of natural disasters can contribute to building community resilience by providing a community with crucial goods and services as well as employment opportunities (Linnenluecke and McKnight, 2015; McKnight and Linnenluecke, 2016). However, further work is needed to resolve what exactly is organizational resilience in the entrepreneurial context and how do entrepreneurs and SMEs build and implement resilient capabilities and practices (Boin and van Eeten, 2013). There is a growing body of important work investigating how internal and external networks can contribute to entrepreneurial resilience (e.g. Doerfel et al., 2013), innovation (e.g. Laforet, 2013) and entrepreneurship as a source of growth (Dahles and Susilowati, 2015). In this special issue, papers 5 (Martinelli et al., 2018) and 6 (Branicki et al., 2018) contribute to these emerging themes in the resilience literature.

The second challenge for future research is to overcome the context-specific nature of studying resilience. Resilient organizations are often studied in the context of disaster management (e.g. Doerfel et al., 2013; Linnenluecke et al., 2012; Seville, 2008). We suggest this is because disaster management provides a fertile ground for examining organizational resilience in an extremely uncertain situation that is not of the organization’s making. Furthermore, the organization must make complex decisions and connect with communities, other organizations and government institutions for survival. The research in particular points to organizational resilience being a multi-level concept, in which individual, organizational, community and other external factors are deeply entangled, particularly in the
disaster management context (Seville, 2008). However, several strands have developed in isolation, limiting the literature’s value to explain of the role of resilience during economic fluctuations. Two papers in this special issue point to this: Manfield and Newey (2018) look at resilience as seen from different disciplinary backgrounds, while Korber and McNaughton (2018) identify the different conversations taking place within the organizational resilience literature. However, a recent systematic literature warns that integration without caution may lead to fragmented knowledge base and diversity in conceptualization (Linnenluecke, 2017). A second context problem is the excessive attention given to high-profile events like earthquakes, hurricanes (Johnston et al., 2012; Webb et al., 2000), terrorism (Godschalk, 2003) and economic crises (Smallbone et al., 2012), while not addressing economic fluctuations that need a more prolonged response over a business cycle.

The third challenge for future research can be found in the approaches used to study organizational resilience, namely, the plethora of conceptual development (Bhamra et al., 2011) and theory building through descriptive qualitative research studies (Boin and van Eeten, 2013; Lengnick-Hall et al., 2011; Stephenson et al., 2010). This is evident in this special issue, but also in the larger body of literature on organizational resilience. While this is normal during the early stages of the development of a new field, there has been a reluctance to move to empirically testing research models through large-scale quantitative studies. Perhaps this is due to the complexities associated with gathering and comparing standard data from public and private organizations of varying sizes across multiple industries from different jurisdictions who experienced different adverse conditions associated with disaster management. A daunting task indeed.

Last, and building on the previous comment, further work is needed to study organizational resilience over time. The obvious constraint to this is an inability to predict where disasters will occur, and therefore for researchers to be able to study pre-disaster organizations. However, there is a move away from viewing organizational resilience as purely the ability to survive times of crisis to embracing organizational resilience as constant preparedness requiring continuous monitoring of the firm’s operating environment, pre-crisis planning and maintenance of internal and external networks (McManus et al., 2008). Adopting a preparedness view of organizational resilience opens the door for research that monitors firms, sectors and institutions over longer periods of time.

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Resilience and entrepreneurship: a systematic literature review

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Abstract

Purpose – The purpose of this paper is to review existing literature at the intersection of resilience and entrepreneurship. It identifies six scholarly conversations, each of which draws on distinct notions of resilience and entrepreneurship. Based on those conversations, shortcomings in the existing literature are discussed and avenues for future research are outlined.

Design/methodology/approach – A systematic multi-disciplinary review of 144 papers that are categorized into six scholarly conversations to build the foundation for a critical discussion of each line of inquiry.

Findings – This paper identifies six conversations or research streams at the intersection of entrepreneurship and resilience: resilience as traits or characteristics of entrepreneurial firms or individuals, resilience as a trigger for entrepreneurial intentions, entrepreneurial behavior as enhancing organizational resilience, entrepreneurial firms fostering macro-level (regions, communities, economies) resilience, resilience in the context of entrepreneurial failure, and resilience as a process of recovery and transformation. The review revealed these publications imprecisely define constructs and use a limited amount of the extant scholarship on both entrepreneurship and resilience. Future research should take a more holistic approach to explore entrepreneurship and resilience from a multi-level and longitudinal perspective, especially in the context of socio-ecological sustainability.

Originality/value – This paper incorporates insights on resilience and entrepreneurship across academic disciplines to show how future contributions could benefit by incorporating research from other fields. In doing so, it provides a starting point for more nuanced discussions around the interrelationships between the different conversations and the role entrepreneurs can play in promoting a positive, long-term trajectory for a socio-ecological system.

Keywords Entrepreneurship, Resilience, Entrepreneurial resilience, Resiliency

Paper type Literature review

Introduction

The concept of resilience has been used in a variety of fields, including engineering (Hollnagel et al., 2006), ecology (Holling, 1973; Walker et al., 2004), psychology (Bonanno, 2004), sociology (Adger, 2000), disaster management (Manyena, 2006), and business administration (Sutcliffe and Vogus, 2003). Although some authors attempt to clarify linkages among related concepts such as resiliency, adaptability, transformability, and vulnerability (e.g. Luthar et al., 2000; Walker et al., 2004), the definitions of and boundaries between these concepts remain fuzzy (Callo-Concha and Ewert, 2014). Nevertheless, resilience is evoked increasingly in studies of entrepreneurial individuals and organizations (e.g. Ayala and Manzano, 2014; Reinmoeller and Van Baardwijk, 2005). Conversely, entrepreneurialism is frequently argued to contribute to the resilience of communities, regions, or economies (e.g. Boettke et al., 2007; Westley et al., 2011). However, literature at the intersection of resilience and entrepreneurship is fragmented into several conversations that often draw on distinct notions of these two constructs.

The resilience construct is relevant in the field of entrepreneurship research for two reasons. First, scholars often use resilience synonymously with preparedness, hardness, persistence, or self-efficacy to explain why some entrepreneurs and their firms perform better than their non-resilient peers do. Second, cognitive and behavioral entrepreneurial traits and distinct forms of entrepreneurship such as social entrepreneurs are said to foster the ability of firms to adjust to new circumstances and to contribute to long-term sustainability through innovation (Biggs et al., 2010). Based on these broad perspectives, we identify six distinct research streams. Four of these focus on preparedness in the face of potential disruptions:
resilience as an *ex ante*, inherent characteristic of entrepreneurial individuals and firms that arises from different adjacent factors, psychological resilience that reinforces entrepreneurial intentions, entrepreneurial behavior that fosters organizational resilience, and entrepreneurial firms (and individuals) as enhancing regional economic or community resilience. In addition, two literatures take a post-disruption view of resilience and explore what happens after a disturbance has occurred: resilience that enables individual entrepreneurs to bounce back from failure or to survive tough times (e.g. Hayward *et al.*, 2010), and resilience as a dynamic process of adjustments of individuals, firms, and macro-level entities to new contextual circumstances (e.g. Dewald and Bowen, 2010). These six conversations set the stage for a discussion of the respective shortcomings of the existing literature and pathways for future research.

Our review reveals that the literature uses a limited amount of the extant scholarship on both entrepreneurship and resilience. First, most papers use the term entrepreneurial simply to describe the set of firms or individuals they study. They seldom discuss to what extent this entrepreneurialism influenced their findings. Second, resilience is often poorly defined; it is used to connote a wide range of concepts such as success, survival, persistence, and optimism. Thus, the value of borrowing the resilience construct from other disciplines, such as socio-ecology, to move entrepreneurship scholarship forward is currently limited. Based on these findings, we argue that future studies should incorporate insights from extant scholarship on entrepreneurship and resilience. Specifically, researchers should take a more holistic view, better contextualize their findings, and explore different facets and negative aspects of both entrepreneurship and resilience. Most importantly, we call for a definition of entrepreneurial resilience that entails a more dynamic conceptualization of doing resilience and to explore the role entrepreneurship plays in shaping the positive trajectory of socio-ecological systems. By offering a timely review of the literature, we characterize the current state of knowledge, and identify opportunities to integrate diverse sets of scholarship at the intersection of entrepreneurship and resilience. In this way, we hope that future contributions move away from portraying resilience as a success factor of entrepreneurial firms and individuals toward a more nuanced, critical discussion of the role resilient entrepreneurship plays in long-term sustainability and prosperity.

**Methodology**
A systematic review is characterized by an “explicit, rigorous, and transparent methodology” (Greenhalgh *et al.*, 2004, p. 582). To achieve this goal, we first outline how we collected the publications that are the foundation of this review. Second, we illustrate how we derived six distinct conversations that scholars engage in by systematically analyzing the literature and report the characteristics that define each conversation.

**Identification of literature**
This paper reviews the literature at the intersection of resilience and entrepreneurship across disciplines. Thus, we did not limit the search for publications to any specific academic field, and included publications in peer-reviewed academic journals and book chapters. First, we conducted a search in four databases – Business Source Premier, ABI/INFORM (ProQuest), Emerald Insight, and Web of Science. Within each database, we applied the Boolean search terms “entrepre* AND resilien*” (the exact syntax depended on the search engine) to identify all publications that contained resilience, entrepreneurship, and related terms such as entrepreneurial, entrepreneur, resiliency or resilient in the publications’ title, keywords, or abstract. We imported each set of results into the reference manager software Zotero (including full-text .pdf file where available). After we removed duplicates, we had an initial data set of 286 publications.
We then read the abstracts of these publications (or the full text in cases where the classification was doubtful) to decide whether to keep or discard the study in the final data set. The principal criterion for inclusion/exclusion was whether it contained a distinct link between entrepreneurship and resilience. The final set of publications explicitly recognized that resilience influences entrepreneurship, or conversely that entrepreneurship (or entrepreneurial behavior) influences resilience. In contrast, excluded publications either made no link between the two constructs or did not elaborate on them at all. For example, Madichie and Hinson (2013) mention a participant’s “resilience as a mother” in the abstract, but do not discuss resilience (or related terms) in the remainder of the paper. Likewise, resilience often just indicated the survival or recovery from economic crisis, without explaining the supposed role of entrepreneurship in the process. We excluded 134 publications in which the link between entrepreneurship and resilience either did not exist or was very weak. We also excluded eight additional works because they were published in popular media and contained no references to prior research.

Data analysis
First, we categorized the final set of 144 publications according to the frequently cited distinction of “resilience of what to what?” (Carpenter et al., 2001, emphasis in original). The “of what” dimension refers to the main level of analysis, and thus to the entity the researcher(s) wanted to explain or to say something about (Babbie, 2014; Merriam, 2009). Similar to the broader literature on resilience (e.g. Rose, 2004), publications in our data set focus on individual (entrepreneurial) resilience, the resilience of (entrepreneurial) firms, or on macro-level systems such as communities, regions, or economies. We also attempted to group the items based on the exogenous event to answer the “resilient to what” question. In extant scholarship on resilience, external events can be immediate and/or short-term (e.g. earthquakes, tsunamis, hurricanes) or involve long-term adversity and gradual changes (e.g. economic downturns or global warming). However, in the articles, the “to what” aspect was often not defined clearly. For example, authors stated only that resilience is necessary to overcome entrepreneurial challenges and to achieve financial success.

To make the classification more meaningful, we added a temporal dimension to the analysis (ex ante vs ex post). Most publications in our data set focused on the period prior to (potentially) disruptive events and identified capabilities or resources necessary to withstand shocks or to adjust to changed conditions. In doing so, they incorporated both notions of resilience that can be found in the broader literature: either as an ability to withstand shocks or to persist through hardship, or as the adaptive capacity to creatively and flexibly respond and to transform over time (see e.g. Folke, 2006; Rose, 2004; Smit and Wandel, 2006; Williams and Vorley, 2014). In contrast, a smaller set of papers examined how individuals, organizations, or macro-level entities responded to disruptive events or contextual changes. These papers conceptualized resilience more from a process perspective and explored the multiple ways actors transformed an existing ability or capacity into action (Linnenluecke et al., 2013, p. 399).

The data set also revealed different conceptualizations of entrepreneurialism. Thus, we coded the literature based on its underlying (often implicit) characterization of entrepreneurship. Most scholars used a very broad definition that included all owner-managers (De Vries and Shields, 2006), new venture founders (Yang and Danes, 2015), SMEs (Biggs, 2011), family firms (Jaskiewicz et al., 2015), founders of political parties (Arter, 2016), and even street musicians (Vaag et al., 2014). In contrast, a smaller set of publications drew on constructs such as entrepreneurial mindsets or behaviors that revolve around notions of innovative and creative exploration and exploitation of opportunities (Allinson et al., 2000; Miller, 1983; Shane and Venkataraman, 2000). Based on the core dimensions of level of analysis, temporal orientation, and conceptualization of entrepreneurship, we identified six scholarly conversations (Huff, 1999).
that provide the foundation for the remainder of this paper. Table I introduces these research conversations using the coding scheme and characterizes the implicit notion of resilience that underpins them.

Using the six conversations as a starting point, the remainder of this paper describes the data set using statistical measures; discusses each conversation in detail to show the particularities of their notion of resilience and entrepreneurship; elaborates linkages to related concepts such as coping, preparedness, adaptive capacity, or sustainability; and identifies shortcomings of the extant literature and suggests potential avenues for future research.

Descriptive results

Figure 1 illustrates the 144 articles by year of publication (the dotted line indicates that only the first half of 2017 is included in our review). A list of all papers in each conversation can be found in the Appendix. Since 2008, interest in topics around resilience and entrepreneurship has increased significantly. Although only half of 2017 is included in the data set, 18 items were already published during this period. This surge of publications in 2017 can be

<table>
<thead>
<tr>
<th>Level of analysis</th>
<th>Conceptualization of entrepreneurship</th>
<th>Temporal orientation</th>
<th>Conceptualization of resilience</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Individuals and firms</td>
<td>Broad</td>
<td>Ex ante</td>
<td>Resilience as traits or characteristics of individuals and firms emerging from (1A) individual (psychological/cognitive), (1B) organizational, and (1C) institutional factors</td>
</tr>
<tr>
<td>(2) Individual</td>
<td>Broad</td>
<td>Preparedness or capacity to adjust</td>
<td>Resilience traits as determinants of entrepreneurial intentions</td>
</tr>
<tr>
<td>(3) Firms</td>
<td>Innovation</td>
<td></td>
<td>Firm resilience as an outcome of entrepreneurial behavior</td>
</tr>
<tr>
<td>(4) Socio-economic systems</td>
<td>Both (innovation and broad)</td>
<td></td>
<td>Resilience as the ability of socio-economic systems to absorb disruptions or to adjust in the face of change</td>
</tr>
<tr>
<td>(5) Individual</td>
<td>Broad</td>
<td>Ex post</td>
<td>Resilience traits facilitating responses to entrepreneurial failure</td>
</tr>
<tr>
<td>(6) Firms and socio-economic systems</td>
<td>Innovation</td>
<td>responses or adjustments</td>
<td>Entrepreneurial resilience as a process of creative recovery, transformation and learning</td>
</tr>
</tbody>
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Table I.
Coding scheme based on three core dimensions

Figure 1.
Publications at the intersection of resilience and entrepreneurship by year
attributed partially to a special issue on resilience and entrepreneurship published in the *Journal of Enterprising Communities* (see McNaughton and Gray, 2017).

In total, 32 percent of the papers utilized a qualitative approach, 35 percent used quantitative or mixed methods, and the rest (33 percent) were conceptual, literature reviews, or editorials. The analysis also revealed the multi-disciplinary nature of the topic area. Most publications (92) are related to business and management research, but others come from economics (12), social, cultural and economic geography (13), socio-ecology (6), planning studies (9), and sociology (4). Additionally, papers in fields such as agriculture, psychology, biology, and the arts are included. Some conversations are dominated by particular disciplines. Table II shows that business management scholars engage predominantly in conversations (1), (2), (3), and (5). In doing so, they draw mainly on a micro (entrepreneurial individual) or firm (entrepreneurial organization) level of analysis. In contrast, other disciplines such as planning studies and economic geography typically explore the interplay between entrepreneurship and resilience at a macro level.

**Research orientations**

Based on the three core dimensions that we utilized to categorize the existing literature (see Table I), we arrived at six conversations at the intersection of entrepreneurship and resilience. Each is described in turn.

**Conversation (1): antecedents of entrepreneurial resilience**

Most contributions (51) in the data set attempt to identify factors that promote or enhance the intrinsic resilience of entrepreneurial firms or individuals. Entrepreneurial resilience in this stream of literature is commonly understood as an *ex ante* condition that enables the entrepreneur (or the firm) to better manage potential crises, setbacks, or challenges. This pre-disruption notion is similar to what the broader resilience literature calls vulnerability or its inverse, preparedness (Rose, 2007). It assumes that resilient firms or individuals are better equipped to deal with disruptions, which in turn predicts entrepreneurial success (Ayala and Manzano, 2014), usually defined as the firm’s economic performance (Hmieleski *et al.*, 2015) or survival (Saridakis *et al.*, 2013).

At the micro-level of analysis (1A), publications draw on psychological constructs that conceptualize entrepreneurial resilience as an amalgam of several individual traits or qualities including flexibility, motivation, perseverance, optimism, self-efficacy, and hope (De Vries and Shields, 2006; Hmieleski *et al.*, 2015) or more generally the entrepreneur’s emotional intelligence (Humphrey, 2013). Other papers refer to the entrepreneur’s social capital (e.g. trust-based networks and support from family or friends) that enables individuals to combat the liability of newness (Bowey and Easton, 2007; Danes, 2013). This literature implicitly assumes that individual resilience contributes to higher levels of organizational resilience. At the meso-level of analysis (1B), papers more explicitly explore factors that enhance the resilience of

<table>
<thead>
<tr>
<th>Conversation</th>
<th>(1a)</th>
<th>(1b)</th>
<th>(1c)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>Total</th>
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<td><strong>Discipline</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Business management</td>
<td>17</td>
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<td>14</td>
<td>9</td>
<td>7</td>
<td>24</td>
<td>3</td>
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<td>92</td>
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<td>Economics</td>
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<td>1</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>2</td>
<td>12</td>
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<tr>
<td>Social, cultural and economic geography</td>
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<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>Socio-ecology</td>
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<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Planning studies</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Sociology and political science</td>
<td>1</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Others</td>
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<tr>
<td><strong>Total</strong></td>
<td>24</td>
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<td>19</td>
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<td>11</td>
<td>42</td>
<td>3</td>
<td>27</td>
<td>144</td>
</tr>
</tbody>
</table>

Table II. Number of papers per discipline and conversation
entrepreneurial firms. Grounded in a resource-based view of the firm, this work often characterizes resilience as a stock or reservoir of resources that “cushion […] against disruptions” (Danes et al., 2009, p. 336). Such stocks include capital, strategic location, governance systems, business strategy, organizational intelligence and diverse products or services (Carayannis et al., 2017; Chrisman et al., 2011; Hedner et al., 2011). Notably, the capacities that characterize resilient entrepreneurial organizations are very similar to the ones identified in the broader literature on business resilience (see Linnenluecke, 2017; Tierney, 2007).

Finally, a set of papers explores predominantly macro-level factors (1C) that enhance entrepreneurial resilience at the individual or the organizational level. For instance, a competitive business environment is presumed to weed inefficient new entrants out of a market, whereas the remaining ones become more resilient (Biswas and Baptista, 2012). Others refer to enabling factors such as financial support through microfinance institutions (Ngoasong and Kimbu, 2016) or training and mentoring programs that enhance crisis management skills or the business acumen of entrepreneurs (Ghosh and Rajaram, 2015; St-Jean and Audet, 2012). In contrast, some scholars draw on psychological literature (e.g. Masten et al., 1990) that conceptualizes resilience as an individual ability to overcome – or grow in the face of – adversity. Resilient entrepreneurs are thus portrayed as individuals who thrive despite restrictive social, cultural, and political norms (Loh and Daheshihsari, 2013) or adverse conditions such as terrorism and war (Branzei and Abdelnour, 2010). Similar to conversation (1A), individual resilience is theorized to contribute to organizational resilience, which in turn yields higher payoffs in challenging environments (Branzei and Abdelnour, 2010).

In sum, conversation (1) depicts entrepreneurial resilience in terms of inherent characteristics or traits of individuals or firms. This view is underpinned by a deterministic notion of causality: several antecedent conditions (psychological traits, organizational characteristics, or macro-level factors) are said to increase firm resilience, which in turn enhances the ability of entrepreneurial organizations to overcome future disruptions. However, this literature says little about the nature of those challenges. Furthermore, it usually does not explain how individual and organizational actors utilize their innate resilience when disaster hits. Finally, it rarely questions the assumption that individual resilience of entrepreneurs inevitably increases firm-level resilience. Rather, entrepreneurial resilience is seen as a resource that firms can simply draw upon whenever disruptions occur.

Conversation (2): resilience as a determinant of entrepreneurial intentions
A smaller set of publications (10) draws on the construct of entrepreneurial intentions (Krueger, 2000) and claims that inherent entrepreneurial resilience (at the micro level) explains why some people start businesses while others do not. Here, resilience is often treated as a synonym for self-efficacy or optimism. For example, Bullough and Renko (2013) showed that aspiring entrepreneurs who believe in their ability to cope with stressful environments were significantly more likely to start a business. The same scholars focus more explicitly on ex ante adversity and demonstrate that individual resilience is positively and significantly related to entrepreneurial intentions in a war zone (Bullough et al., 2014). Similarly, Monllor and Murphy (2017, p. 628) propose that resilience serves “as a shield that protects intentions from the negative impact of fear of failure” and increases entrepreneurial intentions. Unfortunately, publications in conversation (2) do not usually explain how resilience is conceptually different from other related attributes. Furthermore, they seldom address whether all entrepreneurial ventures are worth pursuing. Thus, resilience as conceptualized in this conversation might encourage overconfident entrepreneurs to engage in entrepreneurial activity that is doomed to fail.

Conversation (3): entrepreneurial behavior as a determinant of organizational resilience
Although the 11 papers in conversation (3) also assume a unidirectional relationship between individual and organizational resilience, scholars in this stream draw explicitly on
the notion of entrepreneurship as a mindset or behavior. Thus, this notion of resilience refers
to flexibility and transformability to new circumstances and is linked with innovation
(Lai et al., 2016). In doing so, it builds on the concept of adaptive capacity invoked in the
argues that resilient enterprises can “[...] absorb the hostile situation, becoming aware of what
is happening and thinking over what they need to do, and to realize about the activities of
adaptive transformation to survive in the long period.” Although entrepreneurial resilience in
conversation (3) is often portrayed as an organizational capability, the ability to “act
entrepreneurially” (Jaskiewicz et al., 2015, p. 29) is presumed to emerge from the
“entrepreneurial mindset” (Randall et al., 2014, p. 661), the “entrepreneurial spirit” (Alonso,
2015, p. 193) or the “entrepreneurial behavior” (Reinmoeller and Van Baardwijk, 2005, p. 62) of
firm founders and employees.

This conversation sees resilience as emerging from “entrepreneurial thought and action”
(McInnis-Bowers et al., 2017, p. 39). However, what constitutes entrepreneurial behavior or
mindsets is frequently left unclear. Furthermore, this literature implies that all
entrepreneurs share specific cognitive and behavioral traits. Finally, and like
conversation (1), entrepreneurial resilience is usually discussed only in terms of vaguely
defined potential disruptions. Few studies attempt to show how entrepreneurial behavior
manifests itself when crisis hits, how creative transformation occurs, and whether ex ante
adaptive capacity is in turn enhanced by having mastered crises.

Conversation (4): entrepreneurship fosters macro-level resilience
The fourth stream of literature is grounded in disciplines outside business management,
such as economic geography or urban planning. It argues that entrepreneurship – besides
contributing to economic growth – is integral to the resilience of cities (Williams et al., 2013),
regions (Glaeser et al., 2014), industries (Hatch, 2013), and economies (van de Klundert, 1986).
It also assumes that entrepreneurial firms increase economic diversity and in turn the rate of
survival or recovery of macro-level entities when disruptions occur (McIntyre, 2009).
Scholars in this stream often draw implicitly on ecological literature that shows biodiversity
increases the resilience of ecological systems (e.g. Cutter et al., 2008). According to Williams
and Vorley (2014, p. 258), entrepreneurship is important to macro-level resilience in three
ways: small firms are flexible and can therefore respond to external shocks, they are
adaptable because they can incorporate changes brought about by shocks, and they can
innovate to fit the new circumstances.

Some contributions in conversation (4) refer to resilience as the ability to recover from and
survive disturbances, and others acknowledge a socio-economic system’s “self-adapting
capabilities” (Cooke, 2011, p. 111). While the former notion implies a passive conceptualization
of resilience in terms of coping ability or preparedness, the latter draws again on the notion of
regimes” that are embedded in some regions and enable flexible responses to crisis.
Those regimes are characterized by an entrepreneurial culture, flexible and innovative
entrepreneurs, favorable industrial structures, and diverse knowledge bases. Likewise, Chapin
et al. (2006, p. 201) argue that “adaptive change is most likely when economic incentives
facilitate novelty by encouraging diversity and entrepreneurship.” Similar to conversation (3),
some of these publications link macro-level (economic) resilience to micro-level personality
traits, such as the “entrepreneurial personality” (Obschonka et al., 2016, p. 97) of individuals
residing in a region. Additionally, a set of papers in conversation (4) examines the role of social
entrepreneurs in fostering community resilience. For instance, Weber (2012, p. 411) argues
that “social entrepreneurship is about creating a new product or process that serves an
existing market or an existing structure, often with the laudable implicit or explicit goal of
greater social resilience.” Likewise, Berkes and Davidson-Hunt (2007) found that social
enterprises fostered adaptive capacity and increased the resilience of communities in the face of globalization.

The studies in conversation (4) are often based on quantitative analyses of macro-level data that examine the statistical relationship between entrepreneurial activity (e.g., numbers of new ventures or SMEs) and economic indicators (e.g., the unemployment rate) after disruptions. However, this literature typically defines crisis in terms of economic challenges. It focuses less on ecological disturbances such as climate change or extreme weather events. Furthermore, it generally assumes that all entrepreneurial activity is positively related to macro-level resilience. However, Holm and Østergaard (2015) found that although small entrepreneurial firms enhanced the flexibility and growth prospects of regions after the bust of the dot.com bubble and economic recession of 2000-2001, regions characterized by large, well-established firms were more resistant to disruptions. Finally, most contributions in this conversation assume that the mere existence of entrepreneurs increases the resilience of places, but remain silent on the actual mechanism of their impact when disaster hits.

In sum, conversations (1)-(4) usually conceptualize resilience as a resource. They thus regard it as an inherent characteristic or trait of individuals, organizations, communities, or regions that reduces their vulnerability to some loosely defined disruptions. In contrast, the last two conversations (5) and (6) focus more explicitly on actions and interactions after disruptions have occurred. In doing so, they either conceptualize resilience as a response to entrepreneurial failure or take a processual view on resilience that sheds more light on the diverse sets of responses in the aftermath of disturbances.

Conversation (5): resilience as a response to entrepreneurial failure
The notion of resilience that underpins conversation (5) resembles the concept of engineering resilience used in the broader literature (see Folke, 2006). Thus, these publications draw predominantly on a mechanical notion of resilience that presumes a single stable state (or equilibrium) and measures the resistance to a disturbance and the speed of return to that equilibrium point (see Holling, 1996; Pimm, 1984). For instance, Fredrickson (2001, p. 222) argues that resilient individuals “bounce back from stressful experiences quickly and efficiently, just as resilient metals bend but do not break.” As such, entrepreneurial resilience connotes persistence or hardiness in the face of absent success or the ability to venture again after failures. As with conversation (1), entrepreneurial resilience is characterized as a psychological trait that individuals have or lack. For example, Duening (2010, p. 13) states that “the ability to rebound from entrepreneurial failure and continue the entrepreneurial lifestyle is a textbook example of […] resilience.” Likewise, Hayward et al. (2010) argue that more confident entrepreneurs will be more resilient and consequently more likely to form subsequent ventures after experiencing failure. The notion of resilience in conversation (5) is inherently positive and almost heroic. Entrepreneurs either continue their venture regardless of success or bounce back after failure because they are resilient. However, whether this is always the best choice often remains unanswered in these publications. The literature in this stream does not, for example, explore the extent to which resilient entrepreneurs change their business models following a disruption.

Conversation (6): adaptive resilience as process of recovery and transformation
Finally, conversation (6) is underpinned by a notion of adaptive resilience (see Rose and Liao, 2005; Martin, 2012) and thus focuses on the responses during and after disruptions. In contrast to the concept of adaptive capacity, adaptive resilience involves a process of continuous transformation and learning in the aftermath of disruptions. Along the same lines, Martin (2012) refers to adaptive resilience and argues that “resilience is a dynamic process, not just a characteristic or property” (p. 11, emphasis in original). It is consequently enabled by adaptive capacity, but implies a more dynamic perspective of how firms or individuals deal with disruptions (see Alesch et al., 2001; Tierney, 2007) and how they
transform an ex ante capacity into action (Linnenluecke et al., 2013). This processual notion of enacting resilience is analogous to the shift in the broader entrepreneurship literature toward a more dynamic and processual approach. For instance, Aldrich and Martinez (2001) suggest that entrepreneurial thinking has moved away from focusing on individual characteristics and intentions of entrepreneurs themselves and toward concentrating on their actions and outcomes.

Powell and Baker (2014) examined how and why entrepreneurial firms respond to the adverse circumstances of declining industries in diverse ways. They found that differences in founders’ identities influenced how they enacted and construed the adversity to which their firms needed to respond. In their longitudinal study of environmental service organizations, Gliedt and Parker (2014) investigated diverse responses to funding cuts. They use the term transformation to describe innovative strategies that change organizations to a new state, a process like the notion of adaptive resilience. In contrast, they call responses resilient if their main goal is to return to a pre-disruption state without attempting to change skill sets or services. This is like the concept of engineering resilience. Likewise, Dahles and Susilowati (2015) differentiate between micro enterprises that merely survived dramatic shocks (economic crises, terrorism, and earthquakes) from those that innovated, and thereby lowered their vulnerability to future disruptions. Linnenluecke and McKnight (2017) explicitly focus on the immediate aftermath of disaster and outline four different disaster entrepreneurship approaches (scaling of organizational responses, emergence, entrepreneurial business continuity and improvisation). They argue that “effective planning and improvisation contribute to resilience” (p. 178) in the aftermath of disasters, but also that disasters provide an opportunity for firms to learn from novel circumstances and to formalize response strategies over time. The resilience of firms is thus not static, but continuously evolves and is determined by the dynamic choice of appropriate strategies that are consistent with the context in which a firm is embedded (Conz et al., 2017).

Based on these arguments, an entrepreneurially led response to disruptions or crisis that revolves around constant innovation and learning enhances the inherent resilience of individuals, firms, and macro-level entities. Sonnino and Griggs-Trevathan (2013, p. 272) showed how community food enterprises enhanced community resilience in the face of economic recession “through a process of collective mobilization of local resources.” Similarly, Steiner and Atterton (2015, p. 30) revealed how rural business owners skillfully turned challenges into entrepreneurial opportunities and became “part of the adaptation process, acting as agents of change in supporting rural resilience.” This notion of resilience as evolving continuously because of entrepreneurial behavior is intrinsically linked with sustainability. Some scholars equate sustainability with long-term economic survival or growth (e.g. Caporale Madi, 2013; Saridakis et al., 2013), but others incorporate a notion of sustainable entrepreneurship that is focused on “the preservation of nature, life support, and community [to enable] economic and non-economic gains to individuals, the economy, and society” (Shepherd and Patzelt, 2011, p. 137). For instance, Westley et al. (2011, pp. 775-776) argue that institutional entrepreneurs “who can identify and promote transformative innovations and connect them to the necessary capital – social, financial, and cultural” are crucial for transformations toward global sustainability.

Table III summarizes key findings, exemplary prepositions, and related concepts that characterize the six conversations. It sets the scene for the next section, which incorporates insights from the broader entrepreneurship and resilience literatures and suggests avenues to move each conversation forward.

Discussion and avenues for future research

Our review shows that resilience is often used as an umbrella construct for a wide range of related terms. Because it lacks specificity, this construct adds relatively little to the
entrepreneurship literature. Conversely, research on (organizational) resilience seldom uses insights from the entrepreneurship literature. Indeed, omitting the term entrepreneurial would make little difference to the propositions summarized in Table III. Thus, they are generally consistent with contributions from the broader literature on resilience in business and management (see Linnenluecke, 2017). In this section, we suggest how the insights from resilience and entrepreneurship research can be combined to help a new hybrid disciplinary community emerge (see Siedlok and Hibbert, 2014). To do this, we draw on the broader resilience and entrepreneurship literatures to better ground our six conversations in existing scholarship.

Conversations (1)-(4) conceptualize resilience as a resource that predicts to what extent entrepreneurial individuals, firms, or macro-level entities will be able to master future challenges. Correspondingly, the broader literature speaks of inherent resilience (e.g. Rose, 2004; Tierney, 2007) when referring to such traits or characteristics that cushion against the adverse effects of disruptions. While conversations (1) and (2) argue mainly that resilience (as an amalgam of various antecedent conditions) has a positive effect on entrepreneurial endeavors (e.g. through higher rates of firm creation or survival), conversations (3) and (4) essentially claim the reverse. They portray entrepreneurialism as a set of behavioral traits that underpin resilient firms or macro-level entities. Those macro-level, socio-economic environments rely on the ability of entrepreneurial firms to explore and exploit opportunities innovatively and creatively. In contrast, conversations (5) and (6) explicitly

<table>
<thead>
<tr>
<th>Conversation</th>
<th>Related concepts</th>
<th>Synthesis of key propositions or findings</th>
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<tbody>
<tr>
<td><strong>Antecedents of inherent resilience</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1a)</td>
<td>Vulnerability, preparedness, coping ability, risk mitigation, success factors</td>
<td>An entrepreneur’s psychological traits and social capital predict survival or growth of entrepreneurial firms.</td>
</tr>
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<td>(1b)</td>
<td>Institutional support (mentoring, education, finance) enhances individual and/or firm resilience and predicts, in turn, survival or success of entrepreneurial firms. Adverse conditions (e.g. terrorism, competitive business environment) foster individual or enterprise resilience, which in turn predicts the survival or success of entrepreneurial firms.</td>
<td></td>
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<tr>
<td>(1c)</td>
<td>Self-efficacy, optimism</td>
<td>Higher levels of individual resilience predict the strength of entrepreneurial intentions. Resilient cultural norms limit perceived opportunities to engage in entrepreneurship.</td>
</tr>
<tr>
<td>(2)</td>
<td>Adaptive capacity, transformability, adaptability</td>
<td>Entrepreneurial behavior or mindsets enables creative and flexible solutions to emerging challenges, which in turn predicts firm survival or success of entrepreneurial firms.</td>
</tr>
<tr>
<td>(3)</td>
<td>Mitigation, coping ability</td>
<td>A larger number of small (entrepreneurial) firms mitigate/cushion the impact of disruptions to socio-economic systems.</td>
</tr>
<tr>
<td>(4)</td>
<td>Adaptive capacity, adaptability</td>
<td>A higher level of entrepreneurial activity enhances the capacity of socio-economic systems to adjust to ecological and economic changes.</td>
</tr>
<tr>
<td><strong>Engineering resilience</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5)</td>
<td>Hardiness, sturdiness, persistence</td>
<td>Higher levels of individual resilience predict whether entrepreneurs venture again after failure or continuously engage in entrepreneurial activity despite success.</td>
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<tr>
<td><strong>Adaptive resilience</strong></td>
<td></td>
<td></td>
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<tr>
<td>(6)</td>
<td>Learning, transformation</td>
<td>Explores strategies that entrepreneurial firms utilize in response to disruptions and how those firms in turn contribute to socio-economic transformation and sustainability.</td>
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Table III. Summary of key findings in existing literature
focus on the period after a disruption and depict resilience as a response to various challenges. While conversation (5) draws on the notion of engineering resilience (e.g. Folke, 2006; Holling, 1996) in terms of an individual’s set of psychological traits that enable bouncing back after failure or persisting through hardship, conversation (6) focuses on adaptive resilience (see Tierney, 2007) and thus on the strategies, practices or actions of entrepreneurial entities as they respond to disturbances and changing contextual parameters.

Construct clarity, contextualization, and holistic approaches

Scholars who explore resilience as a resource for entrepreneurship usually conceptualize it as a higher-level construct that emerges from several lower-order traits. However, as illustrated in Table III, the resilience construct is often used synonymously with the persistence, success, or survival of entrepreneurial entities, and adds little unique value. For example, the definition of entrepreneurial resilience as a combination of several preliminary conditions that underpins conversation (1) is consistent with the broader literature on business competitiveness, vulnerability, and continuity (e.g. Herbane, 2010; Tierney, 2007). Thus, to offer additional insight, the concept of entrepreneurial resilience needs to incorporate the notion of entrepreneurial behaviors or mindsets more explicitly. Traits that are typically associated with entrepreneurs, such as risk-seeking, creative problem solving, and intuition (Allinson et al., 2000; Gupta et al., 2013) are presumably essential to anticipating and preparing for future challenges and therefore useful to differentiate entrepreneurial from non-entrepreneurial resilience. Although conversations (3) and (4) have started to draw on this notion, they could provide a more nuanced understanding. For instance, an entrepreneurial mindset is both an individual and a collective phenomenon that firms must manage strategically (Ireland et al., 2003). Instead of assuming that micro-level entrepreneurialism occurs automatically at the firm level, future research could explore how the entrepreneurial potential of individuals can be enabled, fostered, and mobilized in order to create the potential for resilience at the organizational or higher levels.

Second, the literature we reviewed rarely discusses the scope of conditions or contextual circumstances under which the construct of entrepreneurial resilience applies (see Suddaby, 2010). It implicitly assumes that more resilient entrepreneurs and their firms will have superior performance regardless of the challenges they face. Most of this literature focuses solely on economic downturns even though resilience has been invoked in contexts ranging from psychological traumas to short-term disasters and gradual socio-ecological change (Rose, 2007). Future research should distinguish between different types of threats faced by entrepreneurial firms, their different effects on the firm, and the different resilient responses required. In short, entrepreneurial resilience should be “better understood within its historical, temporal, institutional, spatial, and social contexts, as these contexts provide individuals with opportunities and set boundaries for their actions” (Welter, 2011, p. 165).

Synthesizing these avenues for future research, we encourage scholars to approach issues around entrepreneurship and resilience more holistically to incorporate insights from all six conversations. For instance, few studies have examined the role of entrepreneurial entities in predisaster preparedness, short-term initial responses, post-disaster recovery, and long-term sustainable development (see Galbraith and Stiles, 2006; Morisse and Ingram, 2016). Furthermore, although the resilience of entrepreneurs might be affected by “biological, demographic, or contextual factors” (Manzano and Ayala, 2013, p. 250), few studies cross multiple levels and units of analysis. Thus, future research should examine multiple dimensions of entrepreneurial resilience by incorporating psychological traits, behavioral patterns, organizational characteristics, external environments, diverse disruptions, and the daily routines and practices that entrepreneurs enact when they prepare and respond to those challenges.

A holistic approach toward entrepreneurial resilience poses significant challenges. For example, research would need to integrate existing (or create new) measures for resilience.
on different levels such as individual (Connor and Davidson, 2003), organization (Lee et al., 2013; Somers, 2009), communities (Cutter et al., 2008) or economies (Briguglio et al., 2008), with measures for entrepreneurial behavior or culture (Davidsson, 1995; Ljungkvist and Boers, 2016). Furthermore, exploring resilience as both a resource and a response requires longitudinal research designs that track resilience as it unfolds (McNaughton and Gray, 2017). It also requires scholars to recognize more explicitly that “resilience has the potential to become a self-reinforcing cycle” (Berno, 2017, p. 160) in which inherent resilience evolves through creative transformation and the entrepreneurial identification and exploitation of opportunities (Cutter et al., 2008).

Exploring different facets and the dark side of entrepreneurship and resilience
All six conversations draw on an almost entirely positive view of both resilience and entrepreneurship as desired features “that should somehow be promoted or fostered” (Martin and Sunley, 2015, p. 1). Some argue that more resilient entrepreneurs and their firms will master any challenge better than their non-resilient counterparts do. Others claim that higher levels of entrepreneurialism always increase the resilience of firms and socio-ecological systems. Yet, research suggests both resilience and entrepreneurship are not only more complex than they are often depicted, but also have some negative aspects.

First, entrepreneurs are not a homogeneous group. While some start a business because they identify and exploit opportunities for new services or products, others might continuously engage in entrepreneurial activities because they lack alternative employment opportunities (Gimeno et al., 1997; Krueger, 2008). However, researchers rarely differentiate between push and pull entrepreneurs (see Pérez-López et al., 2016 for an exception). Future research could also use existing typologies of entrepreneurs that distinguish between the innovation they introduce (e.g. Risker, 1998) and the different facets of resilience that each group draws upon (or enhances). Furthermore, entrepreneurship scholars from Schumpeter (1934) onwards have portrayed entrepreneurs positively, as being innovative, creative, and risk-taking (Gupta et al., 2013). However, the irrational, selfish, and egotistic behavior of entrepreneurs can have negative consequences (Beaver and Jennings, 2005). Likewise, the assumption that all entrepreneurial activity fosters macro-level resilience to all kinds of challenges needs to be examined more closely (see Holm and Østergaard, 2015). Finally, scholars seldom examine the differences and interdependencies between opportunistic entrepreneurs who strive for individual gains and alternative forms such as social enterprises or ecopreneurs (see Korsgaard et al., 2016 for an exception). For example, socio-ecological resilience on the macrolevel might emerge through the coordinated actions by for-profit, social, and institutional entrepreneurs.

Second, depending on how resilience is conceptualized, its negative aspects need to be considered. For instance, if entrepreneurial resilience entails withstanding or absorbing shocks (i.e. the engineering definition), it might lead to short-run benefits and long-run harm. Although well-developed organizational structures and processes might cushion against immediate disruption, they make a firm less flexible and innovative in the face of a changing environment (Linnenluecke and McKnight, 2017; Martin and Sunley, 2015). Also, this definition of resilience suggests that discriminatory beliefs, racist attitudes, or dependence on fossil fuel are highly resilient and difficult to change (Hanley, 1998). Thus, resilient entrepreneurship might entail actions that disrupt specific forms of resilience while promoting other ones. Future research might use an institutional work lens (Lawrence and Suddaby, 2006) to show how entrepreneurs who encounter opportunities gain reflexive awareness to challenge and resist (resilient) institutional pressures and creatively endorse alternatives in the course of their entrepreneurial activity. In contrast to the usual positive portrayal of resilience, disruptions are usually portrayed as negative impacts that need to be mitigated. However, disruptions also open free spaces and opportunities for entrepreneurs to creatively explore and experiment with new trajectories (Folke, 2006; Smit and Wandel, 2006).
Furthermore, individual resilience traits such as optimism, self-efficacy, persistence, and sturdiness that conversations (1), (2), and (5) emphasize could encourage individuals to engage in entrepreneurial ventures that have limited prospects of success (Hayek, 2012; Spivack et al., 2014). More generally, it is unclear whether entrepreneurial resilience requires persistence, survival, or success. Entrepreneurs and firms that fundamentally change their business models or stop their entrepreneurial activities in light of emerging challenges could be judged as more resilient than their relentless and determined counterparts are. However, this form of resilience requires a high degree of self-awareness, critical reflection, and learning at the individual level. Finally, socio-ecological systems literature has argued that not everyone always benefits from resilience (Carpenter et al., 2001; Derissen et al., 2011). Resilient entrepreneurial individuals and firms, for instance, may ignore the balance among social, environmental, and economic consequences by focusing on immediate local, short-term concerns (Folke et al., 2002; Walker et al., 2004). Future research could thus explore how the (entrepreneurial) resilience of one entrepreneurial entity interferes, reduces, or enhances the resilience of other actors in an interrelated (socio-economic/ecological) system.

**Resilience and the organizational environment**

Based on insights from the papers in conversation (6), we argue that studies of entrepreneurial resilience should focus on the dynamic and process-oriented characteristics of both entrepreneurship and resilience in the context of the organizational environment.

First, disciplines such as socio-ecology have moved away from viewing resilience as perseverance of the status quo and toward a notion of resilient systems that can transform in the face of multiple stable equilibria (Dovers and Handmer, 1992). Similarly, entrepreneurial resilience should not be conceptualized as a stable state, but rather as a "dynamical development process" (Luthar et al., 2000, p. 546) that involves constant sense-making, adjustment, and reevaluation. Thus, there should be more emphasis on what entrepreneurs actually do to create, accumulate, develop and deploy their inherent resilience (Luthans and Youssef, 2007; Williams et al., 2017). Building on the wider practice-turn in social science (Schatzki, 2001), exploring entrepreneurial resilience as practice might result in novel methodological approaches and unique insights into resilient actions (Rose, 2004, p. 307) and their contextual embeddedness. Furthermore, entrepreneurial resilience as a construct needs to incorporate a link between inherent and adaptive resilience that is connected with the human capacity to anticipate and to learn from the past (Brown and Kulig, 1996; Gallopín, 2006; Robertson and Cooper, 2013). For instance, a "dynamic learning perspective of entrepreneurship" (Cope, 2005) could underpin future scholarly endeavors and integrate retrospective and prospective reflection, contextual dynamics, and learning from critical events as essential elements of adaptive resilience. However, while this learning aspect of resilience is often mentioned, insights into the underpinning practices and processes are largely missing.

Moreover, as we have already argued, resilience can be desirable or undesirable (Carpenter et al., 2001). For example, regions or nations that rely on hydrocarbon-based energy might be economically resilient in the short and medium term but less so in the long run as they battle adverse effects from environmental pollution and climate change (Perrings, 1998). Thus, the study of entrepreneurial resilience should focus on the "process linking a set of adaptive capacities to a positive trajectory of functioning and adaptation after a disturbance" (Norris et al., 2008, p. 130). Including the notion of a positive trajectory in the definition emphasizes the positive role resilience can play when it is oriented toward developing a sustainable future (Sankaran and Demangeot, 2017). Conceptualized in this way, entrepreneurial resilience does not simply connote the success or survival of entrepreneurial firms. Rather, it emphasizes the role of entrepreneurial actors in defining and promoting a positive trajectory and the actual processes and practices involved.
For instance, short-term, local concerns and strong socio-cultural institutions might limit the alternative trajectories that individuals can conceive. Suddaby et al. (2015, p. 6) introduce the concept of entrepreneurial reflexivity as “a key mechanism by which entrepreneurs can elevate their imagination beyond the institutionalized constraints of the existing environment and conceive of alternative social, economic and political arrangements.” Skills and behaviors that are typically associated with entrepreneurship may not only foster firm-level resilience but also be crucial to develop individual and collective awareness of the dangers posed by trajectories that are unsustainable in the long run. However, we know relatively little about how entrepreneurs can infuse reflexivity among a wide range of actors, enabling them to “imagine alternative futures for a problematic present” (Emirbayer and Mische, 1998, p. 1006). In addition to problematizing existing trajectories and identifying alternatives, entrepreneurs and their firms may also help to shape positive trajectories by gaining support from and mobilizing other actors (Brown and Westaway, 2011). As Rindova et al. (2009, p. 477) note, entrepreneuring is about “efforts to bring about new economic, social, institutional, and cultural environments through the actions of an individual or group of individuals.” This entails a complex set of interactions between different actors who draw on distinct resources and practices. For example, promoting a positive trajectory might involve economic entrepreneurs (who develop technical solutions), institutional entrepreneurs (who disrupt regulative and normative constraints) and political entrepreneurs (who mobilize support). Thus, future research could use actor-network or social movement theory to explore entrepreneurial resilience as a collective process of “convening, leveraging, and accumulating strategies for shifting social-ecological systems toward sustainable pathways of development” (Westley et al., 2013, p. 11).

Conclusion
This review systematically analyzed the literature at the intersection of resilience and entrepreneurship. We identified six distinct conversations that portray the relationship between the two constructs quite differently: these differences often depend on the discipline from which that conversation emanates. Most researchers focus on the individual and organizational aspects of entrepreneurial resilience, while some explore the social and environmental consequences of entrepreneurship. However, in the majority of the publications reviewed, entrepreneurship provided only a context for studying organizational or individual resilience to vaguely defined challenges. Thus, labeling the subjects “entrepreneurial” added little to the understanding of resilience. In contrast, a smaller set of publications utilized entrepreneurialism as an amalgam of behavioral or cognitive traits that distinguish entrepreneurs from non-entrepreneurs. However, most papers did so in a rudimentary way, by arguing that all entrepreneurs are somehow innovative and creative.

Building on these findings, we offered suggestions about how future scholarship could incorporate existing insights on entrepreneurial resilience with extant research on both concepts. First, the six conversations can build a starting point for more holistic and multi-disciplinary studies. Second, we demonstrated how extant scholarship could contribute novel insights into the potentially negative aspects of entrepreneurial resilience and the inherently processual character of the phenomenon. More research needs to examine what entrepreneurs do when they respond to disruptions and/or enhance the resilience of higher-level entities such as communities. Third, we propose a definition of entrepreneurial resilience in terms of promoting a positive long-term trajectory. In doing so, we argue that the construct of entrepreneurial resilience provides additional insights only if it denotes more than reactive preparedness, persistence, or an ability to cope. Instead, it needs to be conceptualized as an ex ante, multi-level capacity, as well as a contextual embedded dynamic process of positive transformation under adverse conditions.

On a more practical level, our review has highlighted a fundamental distinction between defensive (engineering) resilience and adaptive resilience to external disturbances (Mamouni
Limnios et al., 2014). However, most services that are offered by consulting companies as resilience reviews or resilience checklists focus on the former notion of the construct. Thus, we encourage practitioners to consider the potentially negative aspects of overly rigid and clearly defined structures and processes, which might limit an entrepreneurial firm’s capacity to innovate and adjust to a changing context. Furthermore, the definition of resilience that we endorse highlights the value of entrepreneurial self-awareness, reflexivity, and continuous learning. Finally, from a policy perspective, we emphasize that entrepreneurs and their capacity to sense opportunities might affect the ability to envision and create alternative trajectories of socio-ecological systems. In particular, social entrepreneurs, policy entrepreneurs, entrepreneurial firms, and individual entrepreneurial behavior can promote collective, equitable, effective, efficient, and legitimate actions that are harmonious with this notion of wider sustainability (cf. Adger et al., 2005; Ates and Bititci, 2011).

References


Appendix

**Conversation List of papers**

**Antecedents of inherent resilience**


**Engineering resilience**


**Adaptive resilience**


**Table AI.**

Full list of papers by conversation

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Resilience as an entrepreneurial capability: integrating insights from a cross-disciplinary comparison

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Abstract

Purpose – The purpose of this paper is to examine competing assumptions about the nature of resilience and selects those most appropriate for an entrepreneurial context. Assumptions are integrated into a theoretical framework highlighting how different threats require different resilience responses. Overall organizational resilience results from a portfolio of resilience capabilities.

Design/methodology/approach – Akin to theoretical sampling, the authors identify various theoretical insights about resilience across three disciplines of psychology, ecology and engineering. The authors use these insights to distill competing assumptions about what resilience is and evaluate those most appropriate for entrepreneurial contexts. Existing resilience literature in organization science is critiqued in terms of underlying assumptions and an alternative theoretical framework proposed based on more robust assumptions.

Findings – Other disciplines point to resilience being a process that differs for different threats and as either bouncing back, absorbing shocks or bouncing forward. When imported into entrepreneurship these characteristics lead to a conceptualization of resilience as being enacted through a capability portfolio. A routine-based capability response is preferred when threats are familiar, simple, not severe and frequent, following minimal disorganization and where resource slack is available. In contrast, heuristics-based capabilities are preferred when threats are unfamiliar, complex, severe and infrequent, following serious disorganization and where resource slack is unavailable. An absorption threshold point identifies when organizations need to switch from routine-based to heuristics-based resilience capabilities.

Practical implications – Building resilience across a range of adverse situations requires firms to develop a portfolio of resilience capabilities. Firms must learn to match the capability required for the specific threat profile faced. This includes a mix of routinized responses for returning to stability but also more flexible, heuristics-based responses for strategic reconfiguration.

Originality/value – The paper undertakes a first of its kind cross-disciplinary conceptual analysis at the level of identifying competing assumptions about the nature of resilience. These assumptions are found to be somewhat unconscious among organization researchers, limiting the conceptual development of resilience in entrepreneurship. The authors contribute a theoretical framework based on explicit and robust assumptions, enabling the field to advance conceptually.

Keywords Entrepreneurship, Resilience, Routines, Heuristics, Capability portfolio, Cross-disciplinary comparison

Paper type Conceptual paper

Introduction

Resilience, defined as positive adaptation to adversity, can be an important ingredient for entrepreneurial success (Hayward et al., 2010). Whether internal challenges, such as staff exits or external threats, in the form of product failures and community revolts, entrepreneurial firms recognize setbacks can be ubiquitous parts of the journey, calling for an ability to persevere and bounce back (van Gelderen, 2012). Resilience occupies a distinct place in the entrepreneurial repertoire between decisions to exit (Dew et al., 2006) and escalation of commitment (Ross and Staw, 1993) to a lost cause. Resilience recognizes that disequilibrium can be pervasive and disturbance can derail even the best of firms. But liabilities of newness (Dinne et al., 1988; Geroski et al., 2010; Stinchcombe, 1965), resource deprivations (Baker and Nelson, 2005) and the lean imperative (Eisenmann et al., 2012) all contribute to the context of resilience for entrepreneurial firms. The latter need to be resilient to handle disequilibrium but at the same time can be resource-constrained in their attempts to do so.
Indeed, entrepreneurship is a unique context in which to consider resilience and which departs from organization science more generally. A recommendation often made in wider organization science literature is that slack can be helpful for absorbing, bouncing back from and growing beyond adversity (De Carolis et al., 2009). Slack is defined as the “potentially utilizable resources that can be diverted or redeployed for the achievement of organizational goals” (George, 2005, p. 661). As such, slack involves excess resources over and above current operating commitments (cf. Bourgeois, 1981; Cyert and March, 1963). Indeed, even some entrepreneurship literature also depicts resilience as having resources to cushion against disruptions (Danes et al., 2009). However, having such excess resources is an assumption that does not hold in resource-constrained startups, which may suffer episodes of severe resource depletion. Here, a theory of resilience is needed that also accounts for circumstances where there is an absence of slack.

To better understand resilience in entrepreneurship, existing resilience literature in organization science includes reviews (Bhamra et al., 2011; Linnenluecke, 2017), integrative conceptual pieces (Kantur and İşeri-Say, 2012) and, somewhat rarely, empirical studies (Boin and van Eeten, 2013). Our purpose is to address what we see as a missing step in the conceptual work needed in the field in order to better conceptualize resilience in the entrepreneurial context. This step concerns assumption identification, testing and selection including clarifying and resolving foundational assumptions about what resilience is. What actually is resilience – is it a static attribute of an entity or a process with phases (Masten, 2014)? Is resilience a general disposition possessed by an organization useful across all adversities or rather is it a differential phenomenon - specific types of actions at specific levels of an organization to specific threats even at different historical times (Linnenluecke, 2017)? Can resilience be learned and if so how can it be built by organizations (Burnard and Bhamra, 2011)?

Existing reviews are still finding conceptual fragmentation that acts to block the building of generalized principles for resilience as it applies to organization science (Linnenluecke, 2017). We think the root cause lies in the omission of the step in the conceptual building process, which identifies competing assumptions about a phenomenon, selects the more robust assumptions and carries out subsequent conceptual and empirical research based on this selection. The identification and selection of the underlying assumptions have not been adequately carried out and we think the field will continue to display conceptual confusion until addressed.

To this end, we seek to demonstrate the fecundity of this assumption-level work by finding that more robust assumptions about resilience (resilience as process, threat specific, learned capability) require a capability portfolio approach. Capabilities are sets of processes, interactions, knowledge, skills and cognition which are integrated to reliably and repeatedly execute a set of tasks at or beyond a threshold level of performance and above that offered by ad hoc problem solving (Felin et al., 2012; Helfat and Peteraf, 2003; Winter, 2003). Capabilities embed organizational learning to economize on the benefits of this learning for repeated use. In resilience, this is referred to as reintegration (Richardson, 2002) and so firms can build capabilities in resilience by converting learning into processes and master their execution to a high standard.

A capability portfolio approach means that different types of capabilities (routine based vs heuristics based) are required for different threat and disorganization profiles. In terms of overall resilience, these different capabilities form a portfolio, or collection, to cover a range of adversities. Each capability must be judiciously applied to the appropriate contingent circumstances. Long-term resilience then emerges from the portfolio while surviving short-run adversities depends on any one specific capability within the portfolio appropriate to the threat at hand. Existing conceptual models (Kantur and İşeri-Say, 2012) recognize key assumptions such as resilience as a process and a learned response but do not shed light as
to how such can form a foundation for understanding resilience as a set of different capabilities for different adverse circumstances.

To identify and select foundational assumptions about resilience we draw on the comparative findings of the construct across various disciplines, to distill key insights that benefit organization science. In particular, the concept of resilience has evolved across the disciplines of psychology, ecology and engineering in response to conceptual challenges. By examining this cross-disciplinary evolution we are able to gain insight into how we may unconsciously presume things about resilience. We offer this cross-disciplinary comparison as a method for elucidating assumptions about the nature of a phenomenon.

A common reservation about importing concepts from other disciplines is that theories about oranges cannot automatically become theories about automobiles. The latter are different systems. We argue there is value in importing insights (not whole theories about phenomena) from other disciplines where such insights have face validity and then contextualized in entrepreneurship literature, which more rigorously evaluates the suitability of the insights for this context.

Our contributions then are threefold. First, we use the method of cross-disciplinary comparison to identify, test and select key assumptions about the nature of resilience and different disciplinary conceptualizations. This appeal to other disciplines and undertaking an examination at the level of unconscious assumptions is not the method used in previous reviews of resilience in organization science.

Second, our method leads to new insights about the different threat profiles firms can face. We identify the dimensions for differentiating threats and disorganizations. Also, based on capability literature, we identify different firm responses (routine based vs heuristics based), different orientations (bounce back, absorption, bounce forward) and different recovery levels (previous homeostasis vs new homeostasis). Previous resilience research in organization science has not shed light on these issues.

Third, we connect resilience and capability literatures. Connecting resilience with capabilities literatures extends conceptualizations of resilience as process by identifying the portfolio of different process types needed to build a resilience capability portfolio. A resilience perspective adds to capability literature by showing how different capabilities are required for different threat and disorganization profiles ranging from mild to severe. This deep dissection of threats extends current routine-based and heuristics-based capability literatures, which tend to focus on the relationship between capabilities and competitive advantage when the firm is performing well. Here, we seek to focus on the relationship between capabilities and resilience under conditions of adversity to not just survive but to potentially improve performance. We are able to develop a capability portfolio approach to resilience based on first uncovering robust assumptions about the nature of resilience emanating from the cross-disciplinary comparison.

To our knowledge, no literature to date has fully conceptualized how “certain resources, capabilities (including employee strengths) or organizational structures really promote resilience” (Linneanluceke, 2017, p. 16). Our capability portfolio approach helps us to recognize that resilience emerges from a portfolio of capabilities – routine based and heuristics based (Bingham et al., 2007) – for different resilience scenarios. We develop propositions outlining the circumstances when each type of capability is required.

We next reveal the findings of our cross-disciplinary comparison of resilience and use this to critique resilience theory in entrepreneurship and organization science more generally. Such an analysis lays the conceptual foundation for a process-based model of organization resilience based on a capability portfolio view.

Cross-disciplinary insights into the nature of resilience
Building on earlier work (in particular, Martin and Sunley, 2015), we follow by distinguishing the construction of the resilience concept between the three disciplines of psychology, ecology
and engineering, as shown in Table I. We then compare and contrast these distinct constructions to distill key competing assumptions about resilience, as shown in Table II and elaborated later. Each of these three disciplines exhibit significant extant literature developing the construct as it applies within each domain.

A cross-disciplinary comparison is different to a cross-disciplinary review. The latter would seek a broad comprehensive study of all research in these disciplines, a huge undertaking. Rather, our objective is akin to theoretical sampling in qualitative research (Eisenhardt and Graebner, 2007). We sought perspectives within each discipline which offered something different to the others and which elucidated new assumptions we make about resilience and which need to be considered by organization scientists. Our objective is to begin this process rather than claim that we have represented all perspectives within each discipline.

Our methodological process from discipline to theoretical model proceeded as follows. First, we selected disciplines that demonstrate active and established theoretical and empirical investigations into resilience – psychology, ecology and engineering. Although entrepreneurial ventures are different systems to psyches, ecologies and engineering structures, examining the conceptual development in these other fields is a method for exposing key underlying assumptions about resilience that otherwise may remain unconscious to entrepreneurship researchers, thus limiting their theory-building and testing.

Second, from within each discipline, we then sought influential theories and perspectives about resilience that offered distinctive insights compared with the other selected disciplines. We sought new and different insights rather than replication in order to extend our theory-building and bring different candidate perspectives to bear on understanding the nature of resilience. This partly resulted in the derivation of Table I, which showcases different definitions and perspectives of resilience across the disciplines. Third, our selection of theories

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Definitions</th>
<th>Metaphor</th>
<th>Example references</th>
<th>Key insights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology “[…] the ability to use internal and external resources successfully to resolve stage-salient developmental issues, despite significant adversity” (Egeland et al., 1993, p. 518) “Resiliency is the process of coping with stressors, adversity, change, or opportunity in a manner that results in the identification, fortification, and enrichment of protective factors” (Richardson, 2002, p. 308)</td>
<td>Resilience as bounce forward through integration of new learning to a new homeostasis</td>
<td>Egeland et al. (1993), Luthar (2006), Masten (2014), Richardson (2002)</td>
<td>1. Resilience as a developmental process of encoding learning leading to transformative change of agent 2. Protective factors specific to threats</td>
<td></td>
</tr>
<tr>
<td>Engineering “[…] focuses on the behaviour of the system near an equilibrium point or trajectory, and can be measured by the speed at which the system returns to the stable point or trajectory following perturbation” (Gallopín, 2006, p. 299)</td>
<td>Resilience as bounce back to previous homeostasis</td>
<td>Holling (1996), Woods (2006)</td>
<td>6. Resilience need not always be about transformative change of agent. Sometimes best to rebound back to former stable state</td>
<td></td>
</tr>
</tbody>
</table>

Table I. Cross-disciplinary insights into resilience
and insights within each discipline was based on those which had face validity for utility in an entrepreneurship context. We sought quality over quantity, meaning that we were looking for a small handful of good insights from each discipline rather than an exhaustive list. Fourth, we then took the key insights of the last column of Table I and distilled the host of assumptions buried beneath the insights. Fifth, these insights were then converted into competing assumptions about the nature of resilience resulting in the first column of Table II.

Sixth, these competing assumptions were then used as a conceptual apparatus for examining implicit assumptions and biases about resilience in entrepreneurship research. This resulted in the section of this paper called Resilience in Organization Science and Entrepreneurship and the second column of Table II. Seventh and finally, we then inferred implications from these evaluations for a theoretical framework of resilience in entrepreneurship.
Resilience in psychology

The systematic study of resilience within psychology spans some 50 years (Luthar, 2006), undergoing two main waves of theoretical development. The first wave explored resilience as “the ability to use internal and external resources successfully to resolve stage-salient developmental issues, despite significant adversity” (Egeland et al., 1993, p. 518). By this scheme, resilience is an ability to use internal and external resources. Resources that predict positive outcomes in the face of adversity are known as protective factors. Research has identified both intrapersonal (e.g. optimism, mental toughness, signature strengths, Seligman, 2011, psychological capital, Luthans et al., 2007, intelligence, self-efficacy in exerting control over external events, Bandura, 1997, a belief system that provides existential meaning and a cohesive life narrative) and environmental (e.g. social supports and a sense of connectedness) protective factors (Masten, 2014).

Also important is the finding that resilience is a specific rather than a generalized phenomenon. For example, an individual from an abusive, impoverished childhood may demonstrate education and work resiliency by obtaining a Doctoral degree and a high-paying job but be unable to form intimate relationships (Tusaie and Dyer, 2004). Here, in response to a particular adversity, the individual displays resilience in some domains of life (work) but not others (intimate relationships) and so a generalized attribution of resilient to this individual is imprecise. Attributions of people being labeled as “resilient” then came to be seen as reifying the construct and failing to more precisely identify the specific circumstances and ways in which the individual is and is not resilient. Generalized ascriptions of the term resilient fell out of favor in preference for more specific usage (Luthar et al., 2000; Tusaie and Dyer, 2004; Vanderbilt-Adriance and Shaw, 2008).

A second wave of inquiry asks how the qualities identified by the first wave are actually acquired. Specifically, what are the processes that generate and build these qualities of resilience? This wave was triggered, in part, by longitudinal studies reaching different conclusions about resilience than studies with research designs involving one-time assessments of positive adaptation. Longitudinal studies (e.g. Egeland et al., 1993) found that despite periodic competencies, the overall functioning of maltreated children was poor using broadband measures of resilience over time. People can be resilient at one time but quickly become vulnerable at another, calling into question their true underlying resilience.

Symbolic of process-based views are papers by Flach (1997) and Richardson (2002). Key premises of this model include: disruptive life events can be catalysts for growth; resilience is a process that moves through stages of homeostasis, disruption, disorganization and reintegration; resilience is built at different intervention points and through different means depending on the stage of the process; some degree of disorganization is normal to allow for resilient reintegration; reintegration is about how learning from adversity becomes captured and embedded for future access; individuals can choose how they reintegrate with different methods offering better recovery and inoculation; and finally, inoculation is a key outcome of resilient reintegration.

In summary, within psychology, resilience is a specific rather than general disposition. That is, specific types of protective factors are required for specific threats and resilience occurs or does not occur in different domains (e.g. work, relationships, finances). Resilience can be built at multiple points of time across a process of disruption and reintegration. Disruption can lead to disorganization, which can be so severe as to render almost useless the currently available resources for resilience. Resilience is not just a return to an earlier level of functioning, labeled as homeostasis, but can sometimes involve a desire to grow and move to a higher functioning, a view which goes beyond traditional equilibrium-based definitions (see Bhamra et al., 2011). This is achievable depending on the chosen method of reintegration, post-disorganization. Achieving growth requires conscious attention to and investment in resilience across intervention points before, during and after adversity.
The resilience as process view of the second wave of psychology mirrors discussions about capabilities in entrepreneurship. People learn from adversities and this learning can change their worldview. When this learning is integrated into the psyche, the individual gains a greater reservoir of capacities to cope with the same adversities again. Similarly, entrepreneurial firms face having to encode learning into routines that enable replication of past learning for efficient practice (Winter, 2003). Firms that learn from adversity and codify this learning help to consciously build resilience capabilities against specific threats, offering better future protection.

Resilience in ecology

The work of Holling (1996) and Walker and Salt (2006) in ecology offer additional insights into resilience. Here, study of an ecological system invites us to consider issues such as thresholds in abilities to absorb shocks before current resilience protective factors are transgressed. Actions to be resilient can be costly and so building in absorptive abilities can help to efficiently endure setbacks without adding additional costs. But costs can be significant once such threshold points are breached. An example of this is the concept of planetary boundaries, which defines a “safe operating space for humanity based on the intrinsic biophysical processes that regulate the stability of the Earth system” (Steffen et al., 2015, p. 737). By this scheme, transgression of these boundaries seriously undermines the resilience of the Earth system.

Holling (1996) distinguishes between engineering and ecological resilience. The focus of engineering resilience lies in the rate or speed of recovery of a system back to efficient function, following a shock. By contrast, ecological resilience assumes “multiple states and is defined as the magnitude of a disturbance that triggers a shift between alternative states” (Gunderson and Allen, 2010, p. xv). Here, Holling emphasizes that the resilience of ecosystems can be lost when a return-to-equilibria view is adopted. Rather, “ecosystems are moving targets, with multiple potential futures that are uncertain and unpredictable. Therefore, management has to be flexible, adaptive and experimental at scales compatible with scales of critical ecosystem functions” (Holling, 1996, p. 32). Also, Linnenluecke and Griffiths (2010) argue that resilience as a return to pre-disturbance optimum conditions is a limited view of resilience in extreme ecological event scenarios, where organizational locations and access to natural resources can be wiped out. However, such a dynamic system-shift view of resilience is balanced by, at other times, recognizing that returning to usual equilibria can also represent an appropriate outcome. Resilience then can embrace both stability and change, but in ecology, is always about the continued existence of the ecosystem, that is survival.

Different to psychology, in ecological systems, resilience is a measure that indicates how large a disturbance can be absorbed before the system changes state, usually to a less desirable condition (Brock et al., 2002). Understanding this state change requires appreciating the underlying slow changing variables that are hard to detect but, if correctly identified and managed, can lead to solutions to avoid or at least ameliorate undesirable consequences (Walker et al., 2004). Detecting such impending regime shifts prior to their occurrence offers the possibility of human intervention to avoid the change of state, if it is to lead to a less desirable condition (Biggs et al., 2009).

A key contributor to resilient ecological systems is functional diversity (Folke et al., 2004). Such diversity can exist where different species or groups of species undertake different functions, so that the removal of just one species from the system can shift toward a change of state. Alternatively, the combination of diverse species may represent a diversity of responses to a range of adverse impacts indicating that a healthy and resilient system needs redundancy (i.e. over-lapping functions) to avoid a possible change to a less desirable state when shocks are applied to the system. An organizational equivalent here is slack but the latter can
be in short supply in entrepreneurship making variety generation costly (Linnenluecke and Griffiths, 2010; Senyard et al., 2014). Such firms then rely on their agility, improvisation and bricolage to generate frugal variety in their responses, where bricolage is defined as “making do by applying combinations of the resources at hand to new problems and opportunities” (Baker and Nelson, 2005, p. 333).

Linnenluecke and Griffiths (2010) note the need for resilient organizations which have become increasingly vulnerable to the devastating consequences of climate change. Indeed, discontinuities in ecological systems can necessitate organizational responses beyond traditional methods of adaptation. These authors note the value of the concept of adaptive cycles of ecological systems as also useful for understanding organizational resilience. Adaptive cycles can be applied after losses followed by a phase of reorganization, allowing progressive action in response to large changes. Resilience represents the maximum disturbance an organization can undergo before losing function and control.

One of the limitations of importing insights from ecology and applying them to the resilience of organizations is that the latter have a range of different mechanisms to those available to ecosystems in the handling of adversity. These mechanisms include strategies based on future search and planning, surveillance of climate change hot spots, crisis management, sensemaking and conscious learning from experience.

Resilience in ecology then offers us concepts of absorption, survival, stability that allows change and functional diversity, all of which hold particular relevance for entrepreneurial firms. In addition, the social-ecological framing of the construct embraces an adaptive governance approach that suits both ecological and organizational systems in responding to change (Walker and Salt, 2012). Hence, “resilience reflects the degree to which a complex adaptive system is capable of self-organization (versus lack of organization or organization forced by external factors) and the degree to which the system can build and increase the capacity for learning and adaptation” (Folke et al., 2004, p. 558). By this framing, slack resources become synonymous with functional and response diversity, rendering the ecological resilience construct directly relevant to informing organizational practice.

**Resilience in engineering**

Engineering resilience applies to systems and the people that manage them, designed to operate to a reliable and stable pattern within a defined range of interdependent operating parameters. This means that an underlying assumption in this domain is that the model by which the system functions remains viable and purposeful over time, despite expected and unexpected perturbations that may impact on its operations. This also means that engineering resilience is concerned with monitoring the boundary conditions of the current model for competence (how strategies are matched to demands) and adjusting or expanding that model to better accommodate changing demands (Woods, 2006).

The primary focus lies in maintaining system stability across a range of known operating conditions or the regaining of stability when conditions return to such a range. In addition, engineering resilience seeks to anticipate likely system responses if operating parameters fall outside these known conditions. In this context, the quest for stability of a system “focuses on the behaviour of the system near an equilibrium point or trajectory, and can be measured by the speed at which the system returns to the stable point or trajectory following perturbation” (Gallopín, 2006, p. 299). In this domain, adaptation to perturbations and adversities by a system requires that system to anticipate possible exogenous impacts and to at least issue some signal when those impacts cause or are about to cause performance of the system outside its defined patterns. Engineering resilience is thus forward looking, seeking to alert emerging conditions that may cause the system to fail.

A number of models have been used to help visualize the processes at work in resiliently engineered systems. Most common are the cup and ball model, showing the state of a system
relative to the equilibrium position of a single attractor, and the stress-strain state model, showing the progression stress levels in a system as the impact of perturbations increase over time (for an appraisal, see Woods et al., 2009). These models assume an equilibrium state of optimal performance. The other key concept behind engineering resilience is the speed of recovery from perturbation, with higher speed of recovery more desirable.

Resilience in engineering then emphasizes returning to a usual equilibrium and stability of a system within known parameters. As Holling (1996) indicates, these assumptions do not always hold in dynamic ecological environments in which resilience can mean shifting to a different system state. So too, psychology speaks of growth from adversity to becoming a transformed agent. In an entrepreneurship context, ideas about resilience in engineering correspond to circumstances of shock, which can be handled by an existing organization in the usual ups and downs of commencing a venture. Here, shocks are not so severe as to warrant complete redirection, such as a totally new strategy for instance. However, some shocks can be invalidating to a business model and thereby necessitate shifting to a new organization strategy and operations, a system shift akin to ecological and psychological resilience perspectives.

From insights to competing assumptions
The identification of key insights in Table I masks key underlying debates about the nature of resilience. It is important to make these debates and counter-positions explicit so as to help researchers be more conscious as to their characterization of resilience and choose assumptions appropriate to context. Table II shows the competing assumptions about resilience that emerge from our cross-disciplinary insights. The first column of Table II shows the connection between each of the insights we have observed as displayed in the last column of Table I and the competing assumptions we infer as contained within the insight. This is like moving from data to theory in qualitative research. Authors need to take a conscious position in relation to these competing assumptions, being mindful of the strengths and weaknesses of each.

In addition, the field of entrepreneurship has an opportunity to either learn from the history of conceptual development in these other disciplines or inefficiently repeat their trajectories. For instance, the resilience as static-trait view may destine entrepreneurship scholars to later realize, as did those researching within the psychology domain, that resilience is an unfolding process before, during and after adversity and subject to change, decay or enhancement over time. Resilience as a general disposition, such as when we say that organization X is resilient, may miss that organization X is resilient in specific circumstances only and not others, or resilient at one time but not longitudinally. Researchers then run the risk of reifying the resilience construct if they fail to be precise as to what domains of the organization are resilient to what specific types of threats.

The different disciplines also indicate that how resilience is framed, or what we call reintegration orientation, can predetermine outcomes. Recalling that reintegration refers to how an entity captures and makes accessible learning from adversity, reintegration orientation frames such learning as either returning to a former state or using adversity as an opportunity for new growth. Engineering resilience seeks a return to a former homeostasis while psychological resilience explores how that former homeostasis is redefined to include growth through learning (Lengnick-Hall and Beck, 2005). Interestingly, ecological resilience emphasizes how long a system can absorb shocks before remedial action or responses are required.

Further, “the two contrasting aspects of stability – essentially one that focuses on maintaining efficiency of function (engineering resilience) and one that focuses on maintaining existence of function (ecological resilience) – are so fundamental that they can become alternative paradigms whose devotees reflect traditions of a discipline or of an attitude more than of a reality of nature” (Holling, 1996, p. 33).
Approaches across the disciplines also tend to initially emphasize variance from perceived normal performance milestones as explored through longitudinal studies (Egeland et al., 1993; Luthar, 2006). The evolution of these studies progresses from identifying lists of protective factors before moving to a preference for process studies which recognize the multi-phase nature of resilience before, during and post-adversity. The latter perspective approaches resilience less as a general list of protective factors applicable in all circumstances but rather as a learned process that requires capturing and embodiment of that learning into a capability (Masten, 2014). While such a capability may help inoculate the firm against future similar adversities, it also reflects a coherent set of ongoing learning, practices and cognitions in response to specific threats and disorganizations, rather than a generalized list of attributes.

Entrepreneurial firms are also typically resource-constrained (Senyard et al., 2014). A key determinant then as to whether firms can absorb shocks and adopt routine responses or whether a new equilibrium needs to be sought can be the presence or absence of slack. In circumstances where slack is available shocks may be better absorbed. But where slack is dissipated entrepreneurial firms must come to rely more on frugal improvisation and bricolage to survive and regain (Senyard et al., 2014). The disciplines thus draw our attention also to the different nature of resilience for different circumstances. In some cases returning to stabilized conditions may be the goal whereas in others transformative change may be required.

Two important objectives emerge from identifying these competing assumptions. First, our evaluation suggests building a foundation for research into entrepreneurship and organization science based on assumptions about resilience as process-based, threat specific and with different outcomes emerging from different resilience orientations. This allows us to critically evaluate existing studies in resilience in organization science through a key assumptions lens.

Second, the columns of Table II show the various competing assumptions that need to be made explicit by scholars, our evaluation of these alternative assumptions in choosing those appropriate for an entrepreneurial context and finally the implications of our evaluations for the structure of a theoretical model. Table II thus shows how we moved from assumption identification to selection in context to integration in a theoretical model. We address these two objectives in the next sections.

Resilience in organization science and entrepreneurship
Various schemes for building organizational resilience have been outlined, covering management of a sub-set of assets being human resources (Lengnick-Hall et al., 2011), a focus on cognitive frameworks for adapting to environmental conditions (Watts and Paciga, 2011), a focus on reducing vulnerabilities by reducing the propensity to disruptive events (Sheffi, 2005) and the desirability of various dynamic states (Limnios et al., 2014). Further, learning mechanisms derived from routine actions serve as a means to incorporating individual skills into collective actions (Levitt and March, 1988).

For this paper, we seek to explore fundamental assumptions about the nature of resilience as it applies to the disruptive conditions facing entrepreneurial firms, impacting their ability to attract new resources and maintain such resource sufficiency (Dewald and Bowen, 2010). Studies identifying protective factors against adversity (De Carolis et al., 2009; Mallak, 1998; Sheffi and Rice, 2005) assume that the firm is both strategically and resourcefully efficacious, assumptions which often may not hold true for resource-constrained small enterprises and startups. That is, they assume a level of operating condition of the firm that makes it possible to implement and invest in their suggested protective factors. But some firms, particularly startups, can have near-death experiences which devastate their resource base and lead them into a strategic abyss. They no longer

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...
have the capacity to build or even maintain protective factors like technological capabilities, organizational slack and strategic alliances (as suggested by De Carolis et al., 2009). These firms need to find resilience in these much depleted circumstances, which the recommendations of current work fail to address.

Also, authors overlook interaction effects between their proposed protective factors. Mallak (1998) advises expanding decision making boundaries and encouraging positive adaptive behaviors. Yet the bounded rationality of actors suggests that mistakes could be made and resources squandered on wrong decisions. The firm can rapidly sink into a spiral of organizational decline. The suggested protective factors become inadequate during severely resource-constrained spirals of decline for which other types of resilience are needed, especially as these relate to a firm-wide coherent response by actors. This latter point is in contrast to the implied individual level of analysis when such positive adaptive behaviors are not successful, resulting in entrepreneurial failure (Shepherd and Patzelt, 2017).

The Resilience Architecture Framework (Limnios et al., 2014) seeks to model resistance to adaptation against capacity to adapt to changing conditions, leading to either desirable or less desirable future states through four quadrants. It does not, however, guide actors in how to move between quadrants, from the undesirable, low resilience transience quadrant to the highly desirable high resilience adaptability quadrant. So the process of resilience adaptation is not informed.

The neglect of resilience as process assumptions has led to a lack of any model which collectively considers how resilience needs to be built before, during and after adversity at different intervention points. Organizational resilience as a positive adjustment to challenging conditions conceptualizes responses as either resilient (being more likely in the presence of enabling conditions) or rigid (being more likely in the absence of enabling conditions) (Sutcliffe and Vogus, 2003). Such a construct yields two possible consequences to threats of either positive or negative adjustment. The ability to learn from mistakes and to quickly process feedback are highlighted but the actual core requirements for building a resilience capability in a firm that currently does not possess such capability remains unclear. Learning under conditions of ambiguity, where causation between events are inferred from individual beliefs, individual actions and resulting organizational actions, requires trusting relationships between key actors within the firm (March and Olsen, 1975).

Also undefined are the dynamics of capability adjustments over time under different contexts of threat response. Further, the conditions when the firm may be capable in terms of achieving some level of performance to meet its objectives yet possesses unstable resources remains unexplored. Dynamically re-inventing business models and strategies as circumstances change may sound straightforward (Hamel and Valikangas, 2003) but such re-invention may not be possible. Firms face many competing or incompatible strategic forces with unknowable consequences; incorporating these forces in a climate of uncertainty requires more than just a desire for renewal. Renewal as a response to hard times can lead to a series of constantly changing short-term fixes for a cascade of emerging issues and crises.

The second column of Table II summarizes our evaluation of the various competing assumptions about resilience for entrepreneurship while the third column seeks to consolidate the implications at a firm level of analysis.

A process-based model of organizational resilience
Based on our identification and evaluation of competing assumptions in Table II, the third column of this table draws out further the implications for a theoretical framework of organization resilience in the context of entrepreneurship. Figure 1 captures the implications from column 3. The theoretical framework of Figure 1 embraces the following assumptions: resilience is a process that needs to be developed in relation to specific threats

Resilience as an entrepreneurial capability
Threat dimensions

The three comparative disciplines all indicated that threats can differ in their make-up and this make-up is important for knowing how to guard against them. Threat classification has a long tradition within strategy literature as organizations seek to be alert to changing conditions as an open system. Commonly, any changes are perceived as either threats or opportunities to the firm (Dutton and Jackson, 1987) and are associated with conditions of urgency, difficulty and high stakes (Jackson and Dutton, 1988). The logic of threat-rigidity proposes that threats are perceived as potential loss of control and resources whereas prospect theory approaches change as an opportunity for increased control and attracting more resources depending on strategic orientation and existing levels of slack resources available for re-allocation (Chattopadhyay et al., 2001).

These approaches do not give any regard to the trajectory of the threat as it evolves for a specific firm and therefore fail to incorporate prior learning of the firm in encountering previously navigated threat types. Accordingly, we propose five dimensions that recognize the trajectory of the threat, being severity and frequency (expanding the single dimension (e.g. financial, strategic, operating), where resilience development can be a deliberate learning process which forms a capability which can steer different desired outcomes such as return to former equilibrium or growth from adversity to a whole new incarnation of the firm. In entrepreneurial firms, resilience responses differ based on the presence/absence of slack. This is demarcated by the dotted line in Figure 1, representing a threshold for slack availability and access. When slack is available, routine responses are more likely as resources are available to maintain routine operations. However, when collapse ensues and resources are severely dissipated then firms rely on more frugal responses, improvising with what is at hand.

The theoretical framework indicates that threats and disorganizations can have different profiles and so resilience capabilities must be different depending on these profiles. Capability literature here helps to identify the different capabilities required. Resilience then emerges at the venture level through a portfolio of resilience capabilities. We now work through these various points leading to a series of propositions.
of urgency), complexity and familiarity (expanding the single dimension of difficulty and allowing for some organizational learning) and catalysis (whether a single threat then compounds to trigger other shocks).

Threats can vary depending on severity. In organization science this means the extent to which they can threaten the existence of the firm. In some cases, for example, technological change can cause significant disruption and demise to incumbents (Davis et al., 2009). Threats can also be distinguished in terms of the scale and scope of response required to meet the multidimensionality of the threat. Complex threats implicate numerous organizational sections and entail more extensive coordinated responses. Product recalls following threats to public safety are an example. Threats can also be catalytic as they trigger a ripple effect of other threats. The loss of a key customer, for instance, can cause consequent investor and staff withdrawal. The frequency with which particular threats strike the firm can debilitate through attrition and compounding effects. Finally, the familiarity of a threat to the firm is also determinative of the firm’s ability to handle it, with new and unfamiliar threats sparking non-routine (and therefore unproven) responses and a higher likelihood of disorganization.

The extent of a threat’s severity, complexity, catalysis, frequency and familiarity is also firm-specific with firms differing across a profile, a framing common in the psychology domain with its focus on protective factors and internal resources for coping with adversity. For example, in general terms and faced with the same threat, startups may face a different profile across the threat classification criteria than a large incumbent. Within-group differences will also occur as firms have different past experiences and different resilience capabilities, leading to different threat classifications and effects. For any one firm, threats are regarded as high risk when they have the potential for serious disorganization.

Interaction effects between the different characteristics of threats points toward a decision context where heuristics and behavioral flexibility are required in dynamic capabilities for resilience. Also, faced with different threat profiles firms may develop heterogeneous portfolios of rules to cope and respond, attesting to the state of their resilience capability.

Disorganizations
Specific threats require specific types of resilience. Figure 1 shows that threats can trigger disorganization which, in an organizational setting, is a loss of reliable positive outputs from routines of action. Further, different threat profiles in terms of severity, complexity, catalysis, frequency and familiarity can lead to different types of disorganization experienced by the firm. An important lesson from the cross-disciplinary comparison is the need to classify these different types of disorganization if we are to better understand how firms build resilience against specific threats and disorganizations.

Borrowing from turnaround literature (Robbins and Pearce, 1992; Shein, 2011), where a tripod of internal disorganizations resulting from crises is identified, we explore three main types of disorganization covering strategic, operational and resource. Strategic disorganization refers to an inability to implement strategy, often resulting in strategic dissenison and incoherence (Lamberg and Pajunen, 2005; Sheppard and Chowdhury, 2005). Strategic disorganization can occur following such threats as technological obsolescence, competitor countermeasures, competence-destroying disruptions and product failure (Teece et al., 1997). Strategic disorganization can be characterized by the entering of a strategic vacuum as the generic strategy collapses, competencies are made irrelevant and key product-market strategies fail. In addition, there may be considerable fallout and dissenison among the principal decision makers contributing to a lack of coherence about future strategy.

Operating disorganization can be characterized by gaps arising in resources and operational practices that impede reliable positive outcomes (cf. Wu et al., 2010).
Resource disorganization is characterized by loss of control or access to resources in the short term meaning strategic outcomes cannot be reliably achieved and that new approaches will be required to form stable opportunities for the firm (Cameron et al., 1987). Resource disorganization occurs when key resources become both unavailable and difficult to access in the near-term making the firm unable to sustain its strategic and operating objectives. Staff may leave the firm and/or be poached, lenders become unprepared to extend uncollateralized loans, loan defaults worsen credit ratings and make further finance difficult, investors withdraw, key customers and suppliers collapse, and/or key strategic assets are rendered mute. Further, the firm’s income streams reverse and are unable to cover debt and provide the positive cash flow for needed working capital to sustain assets and operations.

Any disorganization is likely to have an adverse effect on other parts of the organization and thus possibly trigger further disorganizations. For example, the turnaround disorganizations tripod has been extended to include relational disturbances which persist long after crises have passed (Kahn et al., 2013). Relational disorganizations can affect cohesion, flexibility and communication.

To an extent then the different types of disorganization overlap. However, consistent with the general finding in psychology that specific threats require specific resilience, each disorganization can entail distinctive remedial actions. That is, a distinct dynamic capability is required to address each disorganization.

When firms face just a single form of disorganization we call this a singular disorganization. However, ensuing multiple disorganizations are referred to as a complex disorganization, perhaps requiring a portfolio of response types. This distinction between singular and complex disorganizations has implications for firm responses through different dynamic capabilities expressed under different levels of environmental dynamism (Ringov, 2017).

Resilience responses, orientations and outcomes
Our mapping of the threat response landscape in the cross-disciplinary comparison reveals that different types of resilience response are required for different threat and disorganization profiles. In other words, resilience emerges from a portfolio of responses, judiciously applied. Resilience responses comprise a set of cognitions, behaviors, skills and processes that lead to different resilience outcomes (bounce back or bounce forward). The corresponding notion in organization studies is that of capabilities. Repeating the definition from our Introduction, capabilities are sets of processes, interactions, knowledge, skills and cognition which are integrated to reliably and repeatedly execute a set of tasks at or beyond a threshold level of performance and above that offered by ad hoc problem solving (Felin et al., 2012; Helfat and Peteraf, 2003; Winter, 2003).

Capability portfolios
Capability literature draws a distinction between operating and dynamic capabilities (Helfat and Peteraf, 2003). Operating capabilities are usually routine-based and enact the day-to-day operations of the firm – i.e. business as usual (Winter, 2003). In contrast, dynamic capabilities are heuristics-based and “create, extend or modify,” “integrate, build and reconfigure” (Teece et al., 1997) and/or “sense, seize and transform” (Teece, 2007) the firm’s operating capabilities. A key finding of capability research is that both types of capability are required – operating capabilities are for stability while dynamic capabilities are for change (Newey and Zahra, 2009).

So, firms need to develop a capability portfolio in order to accommodate these different sets of circumstances. A capability portfolio is a collection of capabilities aimed at a superordinate objective requiring multiple, often cross-level, capabilities for enactment.
Capability portfolios can be collections of operating capabilities, such as when small firms internationalize (Haapanen et al., 2016), dynamic capabilities such as involved in innovation (Ellonen et al., 2009) or both. Capability portfolios match the findings of resilience research. Resilience as bouncing back corresponds to operating capabilities and the desire to return to normal. Resilience as bounce forward though is akin to dynamic capabilities and the search for new solutions and learning away from the former homeostasis. We contend then, and further develop theoretically below, that resilience emerges from the enactment of a capability portfolio, which comprises different capability responses for different threats, disorganizations and orientations (bounce back or bounce forward).

Figure 1 illustrates the circumstances when each type of capability response is required, the resilience orientation (bounce back or bounce forward) that underpins it and the resilience outcome (recovery level). We explore this further below.

Routine-based resilience capabilities

Routines are “repetitive, recognizable patterns of interdependent actions, carried out by multiple actors” (Feldman and Pentland, 2003, p. 95). Routines can be more or less rigid or flexible (cf. Schreyögg and Kliesch-Eberl, 2007). Rigid routines are a favored capability structure when tasks must be executed in a highly reliable manner in a relatively stable environment (Nelson and Winter, 1982). Routines comprise both cognitive regularities (rules for action) as well as behavioral regularities across multiple interacting actors (Becker, 2004). The stability of routines can be important in the entrepreneurial context because failing to embed learning into routines can entail unnecessary repeat costs (Becker, 2004). Routines also free up cognitive resources to be applied to non-routine events (Cyert and March, 1963).

In the context of resilience, this set of conditions is present when threats are familiar to the venture and the firm has developed a systematic, repeatable response for handling it. Also, routines are preferred for simple threats as the cognitive demand and variety needed is much less for processing the effects of the threat than when the threat has multiple components interacting in unpredictable ways. Minor and frequent threats also allow for the building of a repeatable systematic response as frequency increases familiarity and the trial and error to find an effective routinized response. Routines are also likely to predominate as the capability response when the firm experiences minimal disruption from the threat. Finally, routines implicate the availability of slack resources in the form of available staff, knowledge, finance, and technology to carry out the routine.

For example, after many repeated experiences and trialing of different solutions, a restaurant may have developed a routine-based response to customer complaints. For grievances about dissatisfaction with meals the organization may prescribe to staff that they must follow a routine in the form of a series of steps: step 1 offer a meal upgrade for free or voucher for a free meal next time, step 2 refund the cost of the meal and step 3 record the incident to allow for tracking of the frequency of these types of complaints, the cost and benefits of this solution, suggestions for more effective and economical solutions. Here the threat is familiar, simple, potentially of serious consequence, causing minimal disorganization and capable of being executed when slack exists to pay for the solution. In sum:

P1. Entrepreneurial ventures are likely to choose a routine-based resilience capability response when threats are familiar, simple, not severe, frequent, following minimal disorganization and where resource slack is available.

Reintegration orientation and resilience outcomes

Firms undergoing disorganization have an opportunity for growth through expansion of the firm’s resilience repertoire. Yet firms can choose different ways of processing the threat,
whereby a disruptive event is followed by reintegration (Davis et al., 2009). At the individual level, people are capable of embracing positive outcomes from disruptive events. In psychology and according to Richardson (2002), disorganizations mean that an individual’s world paradigm has changed, possibly expanded (post-adversity). Eventually the person must ask how they are going to overcome this serious disruption, which invokes the process of reintegration.

Reintegration is the process of internalizing learning from adversity. An analogue process in organizations is learning from failure. Indeed, organizations can learn more from failure than success, particularly large failures (Madsen and Desai, 2010).

As indicated in Figure 1, firm responses to threats and disorganizations can range from no reintegration leading to firm extinction, partial reintegration which leads to a recovery to performance levels lower than the previous homeostasis, reintegration back to homeostasis or resilient reintegration which is growth through learning to a new homeostasis (i.e. bouncing forward). Resilient reintegration is a deliberate approach to building resilience characterized by not only recovery but also attempts to build new rules and action sequences which may enable a level of post-disorganization performance higher than the previous homeostasis. Failure motivates actors to reject old mental frames and find ones that offer better protection against failure (Cyert and March, 1963). This resilient reintegration captures the idea of resilience being a growth experience, as indicated in the psychology domain through the notion of post-traumatic growth (Pat-Horenczzyk and Brom, 2007).

Also, different resilience outcomes emerge from how firms configure their responses and orientations. Firms that use particular heuristics or routines with a resilient reintegration orientation position themselves to be able to exploit new opportunities beyond the former set they were pursuing. This is akin to Teece’s (2012) sensing, seizing and transforming activities and entrepreneurial management required by firms to remain competitive and able to dynamically shift. In contrast, firms without such a resilient reintegration orientation are more focused on returning to homeostasis and thus their resilience outcome is more about the re-pursuit of former opportunities (i.e. recovery or bounce back).

There is an efficiency/flexibility trade-off in resilience responses, a trade-off well recognized in organization research (Christensen, 1997; Tripsas and Gavetti, 2000). Figure 1 shows that when threats cause little to no disorganization then the firm may deploy routinized resilience responses, assuming such routines exist. Such responses will maximize efficiency through local search for solutions (Eisenhardt et al., 2010). The resilience orientation is one of return to homeostasis where the firm is merely trying to overcome the disruption and restore former circumstances. Here, learning for a broader resilience repertoire is limited.

As disorganization becomes more substantial there is greater resource loss and so routine responses may become unavailable, especially if they are dependent on the presence of slack. Such can be particularly acute in resource-constrained startups. Heuristics-based responses predominate and become a lower cost method for startups to endure setbacks. These allow wide search and cognitive and behavioral flexibility to identify new solutions from a resilient reintegration orientation (Flach, 1997). Firms are now using a resilience mindset to reinvent the firm beyond former homeostasis[1]. We explore further below the links between firm responses to adversity (routines vs heuristics), learning from adversity (reintegration) and outcomes (existing vs new opportunities).

Routines, bouncing back and resilience
Some schools of thought in psychology and ecology emphasized resilience as bouncing back from adversity (Table I). Returning to homeostasis is the result of deploying routine-based responses, which merely seek to get back to business as usual. The threats faced by the firm
only require a local search solution. This is a key teaching of ambidexterity literature (Lubatkin et al., 2006; March, 1991; Raisch and Birkinshaw, 2008). The latter argues that long-term survival of the firm requires the judicious building of both exploitation and exploration search activities. Exploitation routines engage in local search for solutions for threats and problems relating to existing business. In contrast, exploration involves a wider search beyond existing paradigms within the business often with the aim of much more radical strategic shifts.

Returning to the earlier example of the restaurant, the search for a solution to handling customer complaints is an example of an exploitation process of resilience, whereas responding to the threat of new disruptive competitors with business model innovations may require an exploratory resilience response. Routine-based resilience responses aim to restore the firm to a former equilibrium, since their local search keeps attention within narrow bounds of solution to threats.

Entrepreneurial firms may just want to bounce back when the threat is familiar and not requiring of an extensive response. Also, firm decision makers possess a bounded rationality, which imposes cognitive limits to always perceiving new learning from a threat episode to inform a larger growth process to a new homeostasis. Bouncing back is also favored when change fatigue may have beset the firm and staff are not motivated to undertake the learning required to pursue a new homeostasis. Bounce back may also prevail when funds are unavailable for the capability expansion that can accompany shifting to a new homeostasis.

Putting these antecedents together we find:

\[ P2. \] Entrepreneurial ventures are more likely to return to homeostasis (bounce back) rather than resilient reintegration (bounce forward) when routine-based capabilities are the response mechanism.

**Heuristics-based resilience capabilities**

The advantage of heuristics is that they minimize the requirements for cognitive resources to every emerging problem, allowing selected evidence or cues to quickly indicate the rule to be applied and so ignoring large swathes of irrelevant information to yield desired results (March, 1991). By ignoring the irrelevant information or noise, heuristics assume an underlying evolved capacity to interpret the context for particular cues and the subsequent rule selection for the problem to hand (Bingham and Eisenhardt, 2011).

In their study of the internationalization process of entrepreneurial firms, Bingham et al. (2007) found in one high performing entry the company used several heuristics including take one continent at a time and synchronize entry pace with country’s retail lifecycle. In the context of collapse and resilience, Manfield and Newey (2015) longitudinally studied one firm’s 14 year experience of cycles of collapse and recovery. These authors found that three heuristics helped the firm out of collapse and rebuild operating capabilities: identify asymmetries between survivors and build a functioning collective, cohere strategy and share repeatable patterned actions. These examples show that heuristics offer cognitive boundaries for action while allowing behavioral flexibility for how the heuristic is to be achieved. In contrast, routines can be more rigid in their prescription of how to execute actions.

Such fast and frugal decision making yields flexibility in application in achieving positive outcomes but assumes an often tacit disposition in the way contextual factors are interpreted and noise overlooked. Such contextual disposition is referred to as ecological rationality (Bingham and Eisenhardt, 2011) and is the key predictor of when particular heuristics will fail or succeed. Accordingly, heuristics are best employed to facilitate rapid and flexible decision making under conditions of uncertainty, when the pathway to desired
outcomes are undefined due either to resource collapse or transience (i.e. unreliable or unstable availability). This means that new opportunities can be formed and tried quickly without high decision making overheads, yielding strategic and operating agility. Heuristics are less well suited to conditions of certainty of resource availability, because ignoring information is likely to decrease efficiency in attaining desired goals, unnecessarily increasing operating overheads. Accordingly:

**P3.** Entrepreneurial ventures are likely to choose a heuristics-based resilience capability response when threats are unfamiliar, complex, severe, infrequent, following serious disorganization and where resource slack is unavailable to sustain routines.

Heuristics defend against the trap of capability rigidity, which is when ventures call on reactions to adversity which have worked in the past and they hope will work again. According to Danneels (2010), managers’ outdated schema in the form of resource cognition about which resources could transform Smith Corona beyond a typewriter company, led to its demise. Tripsas and Gavetti (2000) found similar issues impeding Polaroid’s attempts to develop new capabilities.

Instead, the threat situation may demand new learning and new responses, an extension to the capability portfolio. Heuristics permit wide search for solutions and allow the behavioral flexibility to find new solutions. Here is a time for new learning and an orientation of wanting to grow from the adversity so as to not be vulnerable to it again. In contrast, routine-based capability responses entail narrow search options, cognitive and resource rigidity, which is best suited when the aim to return to homeostasis. Our logic contends:

**P4.** Entrepreneurial ventures are more likely to pursue a new homeostasis (bounce forward) rather than return to homeostasis (bounce back) when heuristics-based resilience capabilities are the response mechanism.

**Ad hoc problem solving and routine rigidity**

Serious disorganization depletes resources and therefore makes operating capabilities unsustainable and inoperable. Without heuristics-based resilience capabilities, ventures may then revert to ad hoc problem solving (Winter, 2003), which improvises solutions in that one instance of adversity. Ad hoc problem solving may get them through but may not fully return to a previous homeostasis because of the losses incurred and the higher costs of trial and error learning, leaving the firm a still wounded survivor and not performing as previously in terms of resources and capability. As shown in Figure 1, this shows reintegration but with loss. The firm has recovered but still needs to build:

**P5.** Entrepreneurial ventures experiencing serious disorganization and without heuristics-based capabilities but instead substitute with ad hoc problem solving are expected to initially reintegrate with loss (not back to previous homeostasis) due to higher costs of this trial and error search for a solution.

Also, in circumstances of serious disorganization and without heuristics-based resilience capabilities, firms may choose to fall back, where possible, on previous routine-based resilience responses. This can be due to the cognitive rigidity of managers, who, under pressure, may be falling back on what they know. But this rigidity and the inappropriateness of a routine response may continually drain resources and lead to a collapse trap (Manfield and Newey, 2015). Managers may not break out of these cognitive constraints fast enough to find a new solution, so exposing the firm to possible extinction:

**P6.** Entrepreneurial ventures experiencing serious disorganization that deploy only routinized responses to the new threat profile are likely to experience higher rates of extinction.
**Portfolio of resilience capabilities**

We contend that capability portfolios are a better resilience-builder than either routine-based or heuristics-based capabilities alone. Capability portfolios encompass a greater array of threat-disorganization situations and better fit between resilience response (bounce back and bounce forward) and situations to deliver more efficient and effective overall returns from resilience. Ventures with just one type of resilience capability leave themselves vulnerable to other types of threat-disorganization profiles and the potential for downward spiral. For example, the restaurant without routine-based responses can be left open to a word-of-mouth process spreading negative reputational effects and manifesting as customer downturn and difficulty regaining trust. The same restaurant with just heuristics-based resilience capabilities can allow too much flexibility and variability in behavioral responses of staff at a time when reliable consistent policy is required. Therefore:

**P7.** Entrepreneurial ventures that build a portfolio of resilience capabilities will have longer-term survival rates than ventures which develop just one type of resilience capability (routine-based or heuristics-based) or do not develop any resilience capabilities at all.

**Absorption threshold as tipping point**

The resilience construct has been used to indicate the ability of an ecological system to absorb shock before a change of state occurs (Walker and Salt, 2006). In organization science, resilience can be depicted as an antecedent to strategic agility, whereby the firm can absorb new knowledge to reconfigure resources so as to successfully navigate changing environmental conditions (Lengnick-Hall and Beck, 2009). Combining these approaches, the absorption threshold may therefore be a key fulcrum for determining if a firm shifts from a routine-based to a heuristics-based capability response while navigating changing, disruptive conditions.

By this schema, the absorption threshold is that situation where available capability response mechanisms in the portfolio are unable to handle the unfolding of a threat profile and the ensuing disorganization. The threat profile may start out as per the requirements for a routine-based response laid out in . However, threats and their consequences are dynamic and can spiral downwards and shift from the threat being familiar, simple, not severe, and frequent, following minimal disorganization and where resource slack is available to a profile of the threat becoming unfamiliar, complex, severe, and infrequent, following serious disorganization and where resource slack is unavailable. Much like the change of state indicated in ecological systems, this shift marks a threshold, a tipping point, beyond which different organizational responses are required. Therefore:

**P8.** The absorption threshold marks the tipping point for shifting from a routine-based capability response to a heuristics-based capability response.

**Discussion**

We have contributed a contingency model of organizational resilience. This means that firms must enact resilience differently for different threat and disorganization profiles. Such an insight emerges from our cross-disciplinary comparison. A further insight is that these contingent responses to different adversities can be developed into different capabilities (routine based or heuristic based). Organization resilience therefore emerges from a capability portfolio and requires either routine-based or heuristics-based responses based on conditions of severity, complexity, frequency, familiarity and impacts of disorganization.

Our capability portfolio approach adds to resilience literature by combining contingency and capabilities perspectives. Our resilience perspective adds to capabilities literature by
more closely specifying the different threat and disorganization profiles that may confront firms as well as the different outcomes to be pursued (bounce back, absorption, bounce forward). We propose that heuristic responses applied under conditions of serious disorganization provide the conditions for reintegration into a more highly performing firm than existed prior to the onset of adversities if a portfolio of capability contingencies is present. These insights have emerged by considering competing assumptions about the nature of resilience across disciplines. Each discipline emphasizes different aspects of resilience that form the ground for a contingency model of organizational resilience.

Theoretical implications and future research
Our multidisciplinary comparison exposes that, at a minimum, organization researchers must make their assumptions explicit about whether resilience is a static trait or a process that unfolds through phases; whether resilience is a general trait against all risks or specific to certain threats and domains (e.g. strategic, financial, resource, operating); whether resilience is about bouncing back to a previous equilibrium or forwards to a new incarnation; if resilience can inoculate against future similar adversities; if resilience can be learned and therefore deliberately built. Researchers also need to unpack the different nature of threats based on severity, complexity, catalysis, frequency and familiarity. In turn, these different effects lead to different types of disorganization, with different disorganizations needing either a routine-based or heuristics-based dynamic capability response. Firms thus may come to build a portfolio of capabilities in resilience.

Variable-focused studies can identify risk and protective factors specific to developmental stages of organizations. This can lead to indices that measure how at-risk organizations are by assessing their configuration of cumulative risk factors. A similar line of inquiry could do the same for a resilience index by studying protective factors. What are the risk factors that increase vulnerability and the protective factors that increase resilience at various stages of organization development? Empirical designs that look at high-risk groups yet are able to identify resilient and non-resilient sub-groups would help to identify these factors. Process studies will need to complement this focus by looking at longitudinal patterns of risk and resilience across time and developmental stages. In a prescriptive sense, an important aim of such research would be to identify the risk-based, protective-factor-based and process-based strategies that firms can adopt.

Future research can investigate the links between types of disorganization and particular routines and heuristics. More research is needed to specify the heuristics that help with serious disorganizations. Also, it would be interesting to study how a portfolio of capabilities works and the orchestration skills required for deploying the different capabilities for different contingencies.

Implications for practice
An important implication for entrepreneurs is that they need to be resilience-aware. Too often, they only consider the good times with an absence of serious threats and disorganizations. But resilience capabilities serve a protective mechanism for the bad times. The model we have presented suggests that, contrary to the usual practice to minimize slack resources in the drive for greater efficiencies, managers should consider inducing selective slack resources to counter emerging adversities. The practice of selecting and maintaining such resources underpins the dynamic nature of the capability portfolio we suggest.

To build resilience even in the absence of slack resources, entrepreneurs need to build a capability portfolio comprising both routine-based resilience responses for familiar and simple threats and heuristics-based resilience capabilities for more complex threats.
and disorganizations. Failing to make these distinctions can result in costly errors, including extinction. Entrepreneurs will benefit from sharpening their diagnostic skills to distinguish between different threat profiles.

Conclusion
Resilience is an increasingly invoked concept in entrepreneurship and organization science. However, its trajectory of development has been marked by conceptual work with weakly held or unspecified assumptions. Moreover, often through the desire for distinctiveness, organization science has thus far ignored conceptual developments in resilience in other disciplines. We have found a cross-disciplinary comparison helpful in seeing how researchers have grappled with the fundamental nature of resilience in their respective fields. Organization science and entrepreneurship in particular stands to benefit from close scrutiny of these developments so as to expedite its own learning curve and avoid the lengthy gestation period within other disciplines. We have also proposed that when applied to entrepreneurship, foundational assumptions about the nature of resilience point to a capability portfolio approach. Our contributions of explicit assumptions, a theoretical framework distilled from a multidisciplinary comparison plus connection with a capability portfolio approach offers entrepreneurship a more robust foundation on which to build its own distinct organization resilience research stream. We also propose the conditions by which firms can build capability portfolios that harness the otherwise destructive forces of adversity to yield higher levels of performance. Accordingly, organizational resilience becomes a distinctively promising construct in entrepreneurship.

Note
1. Choice of reintegration (back to homeostasis vs new homeostasis) may not always be the result of a rational decision process. Diagnostic error, political posturing to avoid blame for failure and/or the cognitive myopia of decision makers leading them to prefer past methods all may interfere with a rational decision process (Madsen and Desai, 2010).

References


Further reading

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Innovation and metamorphosis towards strategic resilience

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Abstract

Purpose – The purpose of this paper is to examine what it means to be resilient in the context of environmental turbulence, complexity, and uncertainty, and to suggest how organizations might develop strategic resilience.

Design/methodology/approach – Sampling from the theoretical and empirical contributions to the understanding of resilience within the management and organizational literatures, this conceptual paper presents a model of strategic resilience and theoretical propositions are developed that suggest directions for future research.

Findings – It is proposed that strategic resilience is an emergent and dynamic characteristic of organizations whereby organizational legacy is a defining antecedent, top management team future orientation is a fundamental belief system, and problem formulation is a key deliberate process.

Research limitations/implications – Although the conceptual inquiry of strategic resilience offers clarity on a complex phenomenon, empirical evidence is needed to provide a test of the concepts and their relations.

Practical implications – By asserting that the environment is turbulent, complex, and uncertain, this paper opens up new possibilities for the understanding and study of strategic resilience, whereby metamorphosis and innovation are requisites, and entrepreneurship is part and parcel of strategy. As such it highlights the importance of managerial beliefs and behaviors that facilitate proactively and deliberately challenging of the status quo.

Originality/value – The proposed conceptualization of strategic resilience in this paper connotes action rather than just reaction, and in so doing highlights the importance of the synergy between strategic management and entrepreneurship. As such, it proposes factors that may help organizations persist and create value within a context and future that they themselves also shape.

Keywords Innovation, Organizational metamorphosis, Strategic resilience, Problem formulation

Paper type Conceptual paper

Introduction

Great strides have been made towards the understanding of the importance of resilience to organizational renewal and survival (Linnenluecke, 2015; Vogus and Sutcliffe, 2007). Many studies describe what a resilient organization is or what a resilient organization does in the face of crisis (Burnard and Bhamra, 2011; Gilly et al., 2014). By virtue of example, these descriptions implicitly outline what organizations should do in order to be resilient (Mamouni Limnios et al., 2014; Carmeli and Markman, 2011). Lacking in the literature,
however, is theorizing about how organizations become resilient, and how resilience can be built and nurtured (Sutcliffe and Vogus, 2003). The reason for this is that boundary conditions are underdeveloped that could help define contingent models suited to specific circumstances (Busse et al., 2017).

In this paper, the term strategic resilience is proposed to denote resilience needed in the ongoing here-and-now of pervasive turbulence, complexity and uncertainty (rather than only in crisis) that is faced by established firms (who notoriously struggle with renewal). This conceptual study addresses two main questions:

RQ1. What is meant by strategic resilience?

RQ2. How might organizations achieve strategic resilience?

In answering these questions, this study contributes to the resilience literature in three related ways: it conceptualizes strategic resilience as a useful construct that is pertinent to important boundary conditions. In doing so, it facilitates theory testing by laying out what the construct entails, and it mitigates the research-practice gap by providing specificity to the construct that is testable by researchers and actionable by managers (Van de Ven and Johnson, 2006; Busse et al., 2017). Finally, this study contributes to the resilience literature by laying out a conceptual model that builds on established strategic management concepts that have been shown to facilitate performance and innovation, but that as suggested in this paper also prove useful in outlining the antecedents, beliefs, and practices that are part-and-parcel of strategic resilience.

The conceptual model is developed by suggesting theory driven propositions, and vignettes of an exemplary organization are provided together with verbatim quotes from its CEO to highlight particular issues in the discussion. The vignettes were developed and statements were taken from two interviews of Lars Stenerud, the CEO of Plasto. Plasto is a 60-year old small to mid-sized company located in the town of Åndalsnes, nestled among the fjords of central Norway. Although the interviews were originally undertaken as part of a different study, it quickly became apparent that Plasto provided a great illustration of what is meant by strategic resilience and therefore served as inspiration for the development of this conceptual paper. Given that this is a conceptual paper, the statements that are included in the vignettes should not be perceived as scientific data, and are not used here to provide evidence. Rather, the intent in using Plasto, and specifically the statements of its CEO, is to provide a “means of illustrating the major issues” (Lyles and Schwenk, 1992, p. 156), and to clarify the concepts and theories that are posited as key to the model of strategic resilience.

In order to layout the groundwork for the conceptualization of strategic resilience, in what follows the assumptions upon which this study rests are explicated, and the conceptual background outlined. Thereafter, this study suggests that strategic resilience depends on: a deliberate practice of strategic problem formulation, the future-oriented belief system of the top management team (TMT), and the antecedent of organizational legacy. The interrelation of this practice, belief system, and antecedent to support strategic resilience is explained, and potential implications and avenues for future research are outlined.

Core assumptions
Within management strategy, the assumption that competitive advantage can be sustained (Barney, 1991), and that it is the environment that dictates reaction and adaptation by firms (Burnard and Bhamra, 2011; Bhamra et al., 2011) persists. In this view, organizations are in a state of constant duress because they are unable to accurately predict the ebb-and-flow of their external environments. Within the mainstream management strategy literature, it is also largely assumed that survival is the desired outcome (Greenwood and Suddaby, 2006) and that it is synonymous with resilience (Linnenluecke and Griffiths, 2010; Sutcliffe and Vogus, 2003). This paper suggests two
counterarguments to these assumptions that serve as starting premises for the conceptualization of strategic resilience.

First, this paper suggests that the true nature of environmental turbulence, complexity, and uncertainty (Cannon and John, 2007; Buchko, 1994) cannot be grasped accurately a priori (Poulis and Poulis, 2016) in order to drive adaptive behavior, but that it is evaluated post hoc, and therefore a weak source of strategic direction. Given this counter-argument, the premise of this paper is that the environment is turbulent, complex, and uncertain, not whether or not it is, and that resilience is not simply predicated on the influence that the environment imparts on the organization, but on how the organization behaves given the assumed presence of turbulence, complexity, and uncertainty.

Second, this paper suggests that the goal of survival (Greenwood and Suddaby, 2006) is too static a concept to facilitate resilience. Beyond profit maximization, having survival as the ultimate goal (Kelly, 1997; Lamberg et al., 2009) connotes that for an organization there is just one other polar outcome, death. If that is the case, it is no wonder why organizations focus and invest so many resources and energy in self-perpetuation, making themselves rigid (Staw et al., 1981; Staw, 1981) and path-dependent (Sydow et al., 2009; Miller, 2002) in the process. The premise of this paper echoes Pablo Picasso who said that “every act of creation is first an act of destruction” (de Wit and Meyer, 2014, p. 457). Destruction, however, does not necessarily mean death, but rather, the unlearning that must precede learning and metamorphosis (Morais-Storz and Nguyen, 2017). What is important in a world of turbulence, complexity, and uncertainty, is the organizational ability to reinvent itself where the ultimate goal is resilience itself.

Conceptual background

In light of the increasing turbulence in the natural environment, complexity in technology, and uncertainty in financial systems, it is no wonder that the topic of resilience is increasingly prevalent (van der Vegt et al., 2015). Echoing the concept of biological resilience, organizational resilience is often referred to as the ability to return to a stable state after a disturbance (Bhamra et al., 2011; Burnard and Bhamra, 2011), the capacity to endure and bounce back from a setback (Carmeli and Markman, 2011; Sutcliffe and Vogus, 2003), or the “differential ability” to “react and respond to uncertain, volatile and rapid change” (Gilly et al., 2014, p. 596). Although resilience has been conceptualized in a variety of ways within the management research literature (Linnenluecke, 2015), it is nevertheless primarily defined as a response to some disruption, and the organizational behavior after the disruption has subsided. The majority of the resilience literature thus would seem to address crisis scenarios (Fowler et al., 2007; Spillan and Hough, 2003) that involve swift response and a speedy return to normality.

Notwithstanding the cognitive limitations that are shown to impact organizational members in times of crisis (Weick, 1993), such as threat-rigidity (Staw et al., 1981) and perceptual-narrowing (Weick, 1988), it is likely counterproductive to subsume all turbulence, complexity, and uncertainty under crisis management primarily for two reasons. First, turbulence, complexity, and uncertainty do not happen in a finite moment in time, but are ever-present qualities of the environment to various degrees. Therefore, in this context, a “swift response” may be neither appropriate nor possible. Second, whereas in a crisis the ultimate goal is to return to “normality” or to “rebound” quickly, given a context of turbulence, complexity, and uncertainty, rebounding (Wright et al., 2009) is also likely inappropriate when change and evolution (Kantur and Işeri-Say, 2012) may be imperative.

Crises aside, within the management strategy literature the perspective regarding organizational resilience is predominantly reactive (Staber and Sydow, 2002), whereby the external environment has imparted a negative force that causes the organization to bend
accordingly and later rebound (Bhamra et al., 2011; Burnard and Bhamra, 2011; Gilly et al., 2014; Dalziell and McManus, 2004).

The dominant underlying assumption in the resilience literature is that in order for organizations to be resilient they must adjust their business, or internal configurations, according to the turbulence, complexity, and uncertainty in the environment. There are two issues that render this perspective inoperative to managers. First, this perspective assumes that organizations (and its members) can accurately describe and quantify some level of turbulence, complexity, and uncertainty, (Cannon and John, 2007; Buchko, 1994) and adapt and adjust their processes accordingly. However, determining whether and the extent to which the environment is or is not turbulent, complex, and uncertain, is largely based on individual perceptions (Buchko, 1994), impossible to accurately predict or forecast (Poulis and Poulis, 2016), and therefore, inoperative. Second, this perspective assumes that turbulence, complexity, and uncertainty happens external to the actions of organizations and the agency of its members (Feldman and Pentland, 2003; Greenwood and Suddaby, 2006), and therefore neglects the importance of proactive behaviors (Kickul and Walters, 2002), enactment (Smircich and Stubbart, 1985), and the action-oriented prospective sense making (Weick, 1995) that also contribute to shaping the very complexity in the environment they occupy.

The present paper suggests that a more useful strategy paradigm is to accept as a given that the level of environmental complexity (turbulence or uncertainty) is high. As such, determining the extent (high or low) to which the environment is complex is irrelevant. The premise or belief that the environment is complex (turbulent or uncertain) means that there is no waiting around for an event to occur that might force a reaction, but rather, there is continuous self-reflection and challenging of the status quo. Therefore, in a context of turbulence, complexity, and uncertainty, resilience is not about reacting to a sudden change in the environment, but about the ability to reinvent and “the capacity to change before the case for change becomes desperately obvious” (Hamel and Valikangas, 2003, p. 3). Herein lies the distinction between what is referred to in the literature as “organizational resilience” and what this paper proposes as strategic resilience. Whereas organizational resilience is largely referred to as the ability to adapt and rebound post crisis and sets up a dichotomy between those organizations that have it and those that don’t, strategic resilience entails proactively and deliberately engendering change via innovation because in a world of turbulence, complexity, and uncertainty effective change is a requisite of resilience.

Just as strategy entails formulating long-term goals and the means of achieving them (Chaffee, 1985), strategic resilience entails regularly questioning and reformulating those goals and means of achieving them in order to remain relevant in ever-changing circumstances. Strategic resilience is thus emblematic of the “shape-shifting” needed to compete in an environment where the reality is one where competitive advantage is transient (McGrath, 2013a, p. 44), and strategies and innovations that have run their course (i.e. that are no longer, or may soon no longer be, competitive), are abandoned in order to prioritize new or potential opportunities that provide the next wave of competitiveness (McGrath, 2013a) or the basis for an entirely new organizational expression (Greenwood and Suddaby, 2006). More to the point, strategic resilience is not predicated on adaptation (Linnenluecke and Griffiths, 2010), but on metamorphosis (Starbuck, 1967; Meyer et al., 1990).

Starbuck (1967) defines metamorphoses as “transformations which sharply distinguish one period of organizational history from another” (Starbuck, 1967, p. 113). Metamorphoses can be triggered by environmental jolts (Meyer et al., 1990), and are largely resultants of forces external to the organization (Starbuck, 1967). However, metamorphoses can also be the resultants of managerial strategies pursued (Starbuck, 1967). It is the premise of the present paper that in a world where external forces abound, it is the managerial strategy of
igniting metamorphoses that must be reinforced. Because metamorphic change will not be triggered simply by "intra-organizational processes" (Tushman and Romanelli, 1985, p. 197), it is important to have an appreciation of our global context of transient advantages, whereby competitive advantages are short-lived, and therefore must be continually renewed (McGrath, 2013a, b). This requires seeing potential in ambiguity, and opportunities in the unknown. As such, strategic resilience entails the integration of strategy and entrepreneurial behaviors and beliefs (Ireland et al., 2001).

Identifying and sorting opportunities within the turbulence, complexity, and uncertainty (Vargo and Seville, 2011), and subsequently orchestrating change while taking risk in the hope of profit, is akin to entrepreneurship (Ireland et al., 2001). Although often touted as a quality reserved for start-ups or that of an individual entrepreneur (Sambasivan et al., 2009; Cope and Watts, 2000), entrepreneurial activity (Miller, 1983) within any organizational form is needed to support strategic resilience. Entrepreneurial behaviors and beliefs are characterized by taking risks and seeing opportunities, and by optimism and persistence (Samuel et al., 2016; Sambasivan et al., 2009) in the face of challenges. In addition, entrepreneurship and innovation go hand in hand because it is through entrepreneurial behavior and beliefs that opportunities are identified for innovation which can differentiate an organization from its competitors (Fang, 2005; Kantur and İşeri-Say, 2012). Whereas strategic management primarily focuses on value capture (Barney, 1991), entrepreneurship entails value creation (Hitt et al., 2011). In order to not only endure but also thrive over the long-haul, organizations must do both, and as such, stability and change are not paradoxical (Farjoun, 2010), but part and parcel of strategic resilience.

Metamorphosis is the embodiment of an organization’s capacity to change, and is the result of innovation. Innovation, defined as the development and implementation of new ideas or strategies (Van de Ven, 1986), is thus the mechanism by which organizations can re-invent themselves. Therefore, in answer to this paper's first research question, this paper proposes that in a context of turbulence, complexity, and uncertainty, strategic resilience is an emergent and dynamic characteristic of organizations that can be defined in terms of the rate and consistency in which innovation leads to (value creating) strategic metamorphoses.

Although strategic resilience is inherently a multi-level construct, it concerns strategic level outcomes where the unit of analysis is the organizational strategy itself. The point of the matter is that, regardless of the innovation that can and does happen within the organization in terms of innovative products or services, this is for naught unless the organization's strategy is itself innovative, engendering positive organizational transformation. Strategy formulation (and its innovativeness) is a function of top management, and although factors at the individual level matter, such as CEO transformational leadership (Podsakoff et al., 1990), efficacious beliefs (Carmeli et al., 2013) and self-confidence (Ignatius, 2015), strategy formulation is arguably best achieved by a team (Baer et al., 2013), namely, the TMT.

Strategy formulation is best achieved by a team so as to not only tap into the diverse knowledge and cognitive sets of the TMT members, but also to overcome individual level biases such as perceptual narrowing (Heiman et al., 2009), anchoring (Hurmelinna-Laukkanen and Heiman, 2012), and escalation of commitment (Schwenk, 1984), that may limit innovation. Therefore, team level factors that can support innovation (at the strategy level) are important. Finally, whether due to routines (Cyert and March, 1992) or organizational memory (Moorman and Miner, 1998), at the organizational level there are several factors can serve to inhibit (or support) strategic innovation (Damanpour, 1987; Subramanian and Nilakanta, 1996), and therefore must be accounted for when considering a complete model of strategic resilience.

The proposed conceptualization of strategic resilience as an emergent and dynamic characteristic of organizations that can be defined in terms of the rate and consistency in which innovation leads to (value creating) strategic metamorphoses, builds on the developmental perspective of resilience (Sutcliffe and Vogus, 2003; Egeland et al., 1993) in
the sense that it develops over time. However, whereas previous research links the development of resilience to “continually handling risks, stresses, and strains” (Sutcliffe and Vogus, 2003), in this paper the development of strategic resilience is attributed to deliberate managerial practices and capabilities that facilitate innovation in light of a context of turbulence, complexity, and uncertainty. In addition, whereas with strategy in general means are targeted and deployed until ends are achieved, with strategic resilience the means and ends are intertwined and inseparable. Meaning, while the goal of strategy in general is competitive advantage, the goal of strategic resilience is continued resilience. Strategic resilience begets strategic resilience.

Strategic resilience at Plasto

Plasto, a family company founded in Norway in 1942, is a real world example of strategic resilience. Its strategic resilience is not simply assumed given its longevity, but is exemplified by a history of innovation and metamorphosis. In his own words, Lars Stenerud, Plasto’s CEO provides an illustration of innovation and metamorphosis at Plasto in the following:

Our company was founded when there were opportunities for everything. My grandfather had a company making fuel gas from the elder tree, which is called “knott” in Norwegian [...] and then the next thing, he used the same production equipment for making pens [...] and then he found that plastics would be smarter than using wood for this [...] And we have been into packages of food, music cassettes, supplying to all kinds of industries in Norway. And then, 80’s we were into automotive, furniture, etc.

As is implied in this statement, it is worth highlighting two main points: first Plasto’s history is characterized by serial innovation (making fuel from the elder tree, and using plastic instead of wood for pens), and second when the functional utility of a particular innovation expired, the organizational knowledge set and capabilities were leveraged towards a different innovative strategy that re-defined the organization, but enabled it to persist and thrive.

A model of strategic resilience

Having established the definition and boundary conditions with which strategic resilience pertains, the question that follows is: how might organizations achieve strategic resilience (RQ2)? Given the importance of continuous innovation in this paper’s conceptualization of strategic resilience, constructs within the management strategy literatures that relate to gaining competitive advantage are useful. In what follows it is proposed that strategic resilience depends on a deliberate process of problem formulation, the future orientation of the top management team, and the company’s organizational legacy. Each of these concepts is defined, propositions regarding their relationship to one another are developed, and their role in strategic resilience is discussed.

Strategic problem formulation

When it comes to established firms, entrepreneurial behaviors (Stevenson, 1983) at the strategic level cannot be assumed to be spontaneous (Chandra et al., 2015). They must be deliberate and manifest as a function of the top management. The notion that “what an organization wishes to become or why it wishes to reproduce itself is a powerful explanation of action” (Poulis and Poulis, 2016, p. 517), connotes intent in that metamorphosis depends on deliberate self-analysis. In the context of complexity, turbulence and uncertainty, this means continual reinvention (Nunes and Breene, 2011). Continual reinvention is the product of innovation that is facilitated by regularly questioning and updating strategic choices.
Within a paradigm of sustainable competitive advantage, however, organizations are less likely to maintain, let alone regularly update, strategic innovation options, and are more likely instead to reinforce a singular option, perpetuating past-experience in an almost semi-automatic process that is embedded in routines, rules, and operating procedure (Gavetti et al., 2012). These routines, rules and operating procedures provide “orderliness and stability” for organizing in stable environments but also create “blind spots” (Weick and Sutcliffe, 2007, p. 23), and in a context of turbulence, complexity, and uncertainty they can quickly become maladaptive.

In order to compete in a world of transient advantage (McGrath, 2013a), it is important not only to maintain and regularly update a portfolio of strategy and innovation options, but also to know when to disengage (McGrath, 2013a, p. 14) and morph. To enact this, organizations must have a frequent and deliberate process of self-analysis that helps to define and re-define who they are, but also who they want to become.

### Problem formulation at Plasto

At Plasto, the top management team meets regularly to discuss strategic decisions and opportunities. In addition to having open discussions, the top management team actively seeks the input of internal and external specialists in order to bridge the gaps in their current knowledge about current or potential opportunities. Together, the top management team places great emphasis on discovering new markets by “cultivating” possibilities. To do this they regularly consider (and re-consider) what the company is and what it wants to be, according to Stenerud, by asking “big” and “strange” questions:

> We are looking into the big questions by looking into the core of the company. We have to be humble, our role can only be very small because of the size of our company and the resources, but for new products and markets we can make an important difference. We are not focused on competitors or others because our strategy is to be far beyond them, if we can. Innovation is raising strange questions. By being open minded, by having discussions, we were able to raise questions which actually lead to new technology.

The deliberate process of self-analysis (asking the “big” and “strange” questions) and devising alternative framings is referred to as strategic problem formulation, and it is a key facilitative process of innovation. Albert Einstein is often credited with stating that “the formulation of a problem is often more essential than its solution, which may be merely a matter of mathematical or experimental skill” (Einstein and Infeld, 1938, p. 92). People and organizations alike, however, are often quick to “jump to solutions” (Enders et al., 2016) and take problems as givens, potentially solving the wrong problem – also known as a Type III error – (Buyukdamgaci, 2003; Chae et al., 2005), or limiting innovation (Biazzo, 2009; Felin and Zenger, 2016) and value creation (Heiman et al., 2009; Nickerson et al., 2007).

The importance of problem formulation is mentioned in various literature streams including within management strategy (Baer et al., 2013; Lyles, 1981); creativity (Reiter-Palmon et al., 1997; Chand and Runco, 1993; Csikszentmihalyi and Getzels, 1971) and operations management (Choo, 2014; Bowen, 2001), but more research is still needed to determine what could facilitate it. This is crucial to enable firms to become better at defining what exactly is the problem that they intend to solve (Spradlin, 2012) which when solved will create value (Felin and Zenger, 2016; Heiman et al., 2009).

Given the context of turbulence, complexity, and uncertainty where opportunities are not always obvious (Endres and Woods, 2007), and given the natural tendency to jump to solutions (Enders et al., 2016), without a deliberate process that counters that tendency and
articulates emergent opportunities or problems worth solving (Nickerson et al., 2007), innovation may indeed remain elusive. The crux of the matter is that “designing a desirable future” (Ackoff, 1978, p. 66) requires a formulation of what that might be. Therefore, although the importance of problem formulation in general is well established, the role of problem formulation at the strategic level as a mechanism of strategic resilience is under-theorized:

P1. Strategic resilience depends on a deliberate process of strategic problem formulation. Because problem formulation can determine the strategies that are pursued, it has implications for innovation, the future direction of the organization (Lyles, 1981, p. 74), and whether or not the strategies pursued will provide new sources of competitive advantage (Heiman et al., 2009). Strategic problem formulation entails not only conceptualizing the present organizational context in order to “capture value from existing value streams”, but also conceptualizing future scenarios of what the organizational context might be in order to create new value streams (Heiman et al., 2009, p. 28). To do so, the TMT must regularly engage in collaborative communication (Reiter-Palmon et al., 2012), and in particular, open-ended communication (Foss et al., 2016), that challenges the status quo.

Challenging the status quo can be fraught with various obstacles that emerge from biases that are known to plague the work of teams, such as “anchoring, perceptual bias, information distortion, dominance, groupthink, primacy, satisficing and conflicts of interest, among others” (Nickerson et al., 2007, p. 215). Measures must be taken to overcome these biases, and although structured processes (Baer et al., 2013; Buyukdamgaci, 2003) can facilitate the problem formulation process of teams, the results of any process will likely depend on the cognitive diversity (Miller et al., 1998), behavioral integration (Simsek et al., 2005), psychological safety (Edmondson, 1999), and the values and beliefs of the TMT.

TMT future orientation
Although the process of problem formulation matters to innovation, by itself it is not enough. Those tasked with formulating what the organization wishes to become (i.e. the TMT), must be able to imagine future scenarios and give them meaning in their present organizational context. In this paper, this ability is referred to as TMT future orientation.

How future scenarios are framed depends on the cognitive bases of managers (Hambrick and Mason, 1984). Within the psychology literature (e.g. Nurmi, 1991), future orientation is a well-developed construct which refers to the “ability to anticipate future events, to give them personal meaning, and to operate with them mentally” provides a basis for people’s orientation to the future (Nurmi, 1991, p. 4). Notwithstanding that managers by no means resemble adolescents, this paper is concerned with the managerial equivalent; how managers see the future of their organizations.

Steering organizations steadily through ever present turbulence requires entrepreneurial managers who are not only comfortable with uncertainty (Beugrè et al., 2006), but who can also articulate a future vision (Lumpkin and Dess, 1996) in terms of organizational goals (Reiter-Palmon and Illies, 2004). The managerial ability to look ahead while enabling future visions has received attention in the foresight literature of strategic management albeit described in different terms, such as hyperopia (Mackay and Burt, 2015), managerial foresight (Ahuja et al., 2005) and foresight attitude of managers (Bootz, 2010). Yet neither hyperopia nor managerial foresight fully captures the idea of TMT future orientation. Hyperopia implies a difficulty in understanding the near future, and managerial foresight is conceptualized as an activity managers need to perform to develop a better understanding of what the future might bring. Foresight attitude of managers pertains to the cognitive dimension of anticipation (Bootz, 2010). This paper builds on the notion of foresight attitude to conceptualize managerial future orientation as the ability to imagine future scenarios and give them meaning in their present organizational context.
A manager’s future orientation is a cognitive feature or mindset, reflecting the orientation towards abstract future directions and opportunities, and as such is akin to entrepreneurial beliefs. A manager’s future orientation (or belief system) precedes intentional acts and managerial vision (Van den Steen, 2005). Some people are intuitively more attentive to environmental trends (Hofmann, 2015), and for this reason, strategy formulation is best achieved when the heterogeneous cognitive strengths of the members of the TMT can be harnessed (Reiter-Palmon and Illies, 2004; Reiter-Palmon and Robinson, 2009). The TMT belief system is thus a collective cognitive characteristic of the top managers’ varied mental models (Senge, 1992) with respect to how the future is perceived.

**TMT future orientation at Plasto**

At Plasto, the TMT “thinks in decades” all the while accepting the world is constantly changing. Assuming a constantly changing world forces the TMT to imagine future scenarios and relate them to their strategic endeavors. In order to be able to imagine future scenarios sensitivity to environmental trends is emphasized. As illustrated in the statement by Lars Stenerud, the sensitivity to environmental trends does not necessarily have to be an innate ability, but rather, a deliberate cognitive attitude:

> We should be exposed to a lot of questions. It’s like life itself. When you walk through a city, you are not exposed to one thing at a time, and especially since we think that innovation comes from a lot of inputs, and then, seeing patterns or stealing ideas from one environment and putting it into a new environment, to see what’s happening, or learn from several sources at one time.

Strategic problem formulation helps make sense of ambiguity and what it might mean for strategy. Doing so, however, does not necessarily happen spontaneously, especially when managers are swamped with everyday problems that prioritize reactive rather than proactive behaviors (Basadur, 2011). In spite of the fact that it can be difficult and time consuming (Reiter-Palmon and Illies, 2004), a deliberate process of strategic problem formulation is needed for the TMT to proactively challenge its status quo. In addition, a TMT that is future oriented takes interest in detecting signals and trends that can provide information about the future, and possesses the ability to translate what others perceive as noise into meaningful information (Haeckel, 2004). Therefore, TMT’s that are future-oriented will be more inclined to engage in strategic problem formulation relative to those that lack future-orientation:

**P2.** There is a positive relationship between strategic problem formulation and TMT future orientation.

The extent to which the TMT is able to proactively challenge its status quo and activate strategic change, depends not only on the future orientation of the TMT and a deliberate process of strategic problem formulation, but also on organizational context (Dutton and Duncan, 1987). History and past experience are not only extensively referenced in planning for the future (Pounds, 1969), they also inform the culture that influences organizational members’ perceptions of what can and cannot be done (Conger, 1989). When it comes to strategic resilience the perception of what can and cannot be done can have a significant impact.

**Organizational legacy**

Past experience influences the choices and decisions (Cyert and March, 1992) that are made in the present about the future, and the things that worked well and proved successful in the past tend to become cemented in organizational histories and routines.
Therefore, they are difficult to change (Hannan and Freeman, 1984) and can be a veritable obstacle to strategic reinvention. In this paper, the routines, processes, and stories that are told about how and what gets done is referred to as the organizational legacy. Organizational legacy is here conceptualized as an antecedent of strategic resilience, and it can either be an obstacle or a blessing.

Although the management strategy literature largely focuses on the dimension of organizational legacy that over time might render it rigid (Hannan and Freeman, 1984) and path-dependent (Sydow et al., 2009), whether the character of organizational legacy is that of a negative burden or an uplifting support to reinvention and change, likely depends on both adaptive capacity (Staber and Sydow, 2002) and the absorptive capacity (Cohen and Levinthal, 1990) of the organization. Adaptive capacity “refers to the ability to cope with unknown future circumstances” (Staber and Sydow, 2002, p. 410). Absorptive capacity is “the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends” (Cohen and Levinthal, 1990, p. 128). Whereas adaptive capacity enables continuous development, absorptive capacity enables the recognition of value in that continuous development. Therefore, in order for organizational legacy to enable rather than hinder strategic resilience, both are needed.

Organizational legacy at Plasto

Plasto is an example whereby its organizational legacy is an enabler of strategic resilience. Not only does the company change their product offerings over time, it also continuously questions its mission and way of doing things. In addition, its CEO is keenly aware that the past can only get it so far, thus motivating a continual search for knowledge that can be the source for their next innovation and facilitate strategic resilience, stating:

You know when the boat is moving you a wave behind the boat. We call it the 'hekkbølge' in Norwegian, that means the wave that is following the boat, and that means even if we have now a tougher financial situation, even if we have to reduce our level of R&D projects, we know that this wave will still push us for a while. But you cannot reduce for a long time then the boat will stop. So we have decided that our company should continue to do a lot of investment to R&D due to that differentiator, and that gives us the opportunities and gives us access to the smartest minds.

The ability to cope with change (Dalziell and McManus, 2004), and to continuously develop new knowledge (Burnard and Bhamra, 2011) is key to success in turbulent environments (Schindehutte and Morris, 2001). Staber and Sydow (2002) suggest that adaptive capacity is advantageous for organizations dealing with complex and often tacit knowledge, where the circumstances are highly uncertain, and that “organizations with limited adaptive capacity tend to search for solutions to problems in terms of the competencies they already possess and can therefore understand” (Staber and Sydow, 2002, p. 411). In addition, although adaptive capacity is said to be related to creation of novelty and learning (Burnard and Bhamra, 2011; Bhamra et al., 2011), it also requires a minimum of knowledge (Staber and Sydow, 2002). This is where absorptive capacity comes in, as it determines an organization’s ability to harness the knowledge of future environmental states.

Absorptive capacity refers to an organization’s ability to “identify, assimilate, and exploit knowledge gained from external sources” (Flatten et al., 2011, p. 98), and is therefore crucial to an organization’s ability to make judgments about its future. While Hajizadeh and Zali (2016) suggest that prior knowledge impacts entrepreneurial alertness and learning, Levitt and March (1988) argue that organizational learning is based on routines and is
history and path-dependent. Absorptive capacity extends the reach of organizational learning (and ultimately of innovation and strategic resilience) not only by increasing the ability to recall and apply prior knowledge, but also by increasing the ability to assimilate and acquire new knowledge (Cohen and Levinthal, 1990). Findings show that (at least with SME’s) higher absorptive capacity is also associated with innovation (Colin, 2006). Furthermore, higher levels of absorptive capacity produces more proactive organizations (Cohen and Levinthal, 1990).

Given a world of turbulence, complexity, and uncertainty it is very unlikely that the organization will face the same problems it faces today (or that it has faced in the past) in the future, so the capabilities that today provide an advantage may tomorrow become its disabilities (Christensen and Overdorf, 2000). Thus, investing in absorptive capacity and adaptive capacity simultaneously is important in enabling organizations to reinvent themselves continually. Doing so will come to define an organizational legacy that both values continuous development and has the capacity for it.

Although adaptive capacity has been conceptualized as an outcome of learning (Carmeli and Sheaffer, 2008) and as an outcome dimension of TMT resilience (Carmeli et al., 2013), in this paper it is conceptualized (together with absorptive capacity) as an antecedence of strategic resilience. The reason for this is that an organization that is characterized by the ability to cope with future circumstances and the ability to recognize the value of knowledge that provides insight into what those circumstances might be will support managerial future orientation. Meaning, if an organization’s legacy impacts the perception of what can and cannot be done, it will either inhibit or facilitate the ability of leaders to imagine future scenarios and give them meaning in their present organizational context:

\[ P3. \text{ Organizational legacy is associated with TMT future orientation.} \]

Differences in organizational legacy would explain “why organizations respond differently to strategic issues” (Dutton and Duncan, 1987, p. 292). Given this paper’s conceptualization of strategic resilience (as an emergent and dynamic characteristic of organizations that can be defined in terms of the rate and consistency in which innovation leads to value creating strategic metamorphoses), organizational legacy is also constantly re-written by recursive metamorphoses.

\[ \text{Strategic resilience: a model of multiple order outcomes} \]

In the preceding sections it has been proposed that organizational legacy is associated with TMT future orientation (\(P3\)) that there is a positive relationship between TMT future orientation and strategic problem formulation (\(P2\)) and that strategic resilience depends on a deliberate process of strategic problem formulation (\(P1\)).

In addition, the conceptualization of strategic resilience as an emergent and dynamic characteristic of organizations that can be defined in terms of the rate and consistency in which innovation leads to value creating strategic metamorphoses, means that metamorphosis (changing the status quo), must occur regularly and systematically. Doing so requires regularly going back to the drawing board to engage in a deliberate process of problem formulation where what the firm is and what it hopes to become is reconsidered and reinvented via innovation:

\[ P4. \text{ Strategic resilience depends on a recursive cycle of problem formulation, innovation, and metamorphosis.} \]

Following from the propositions that have been outlined, a model of strategic resilience is suggested (see Figure 1). What is suggested by this model is that organizational legacy is a defining antecedent, TMT future orientation is a fundamental belief system, and strategic problem formulation is a key deliberate process, the first order outcome of which is innovation.
Innovation precedes and is the impetus of metamorphosis (the second-order outcome), and strategic resilience (the third-order outcome) is dependent on continual renewal which is facilitated by a recurring process of problem formulation. Furthermore, just as the recursive action of a process of strategic problem formulation is needed in order target the innovations that may drive future metamorphoses, the metamorphoses themselves will recursively impact the organization’s legacy because by changing the status quo a new organizational identity is forged (amplifying both its adaptive and absorptive capacity in the process). Therefore, this model suggests not only factors that must be present to support and promote strategic resilience (the third-order outcome) but also the cyclical and recursive process of metamorphosis that is needed. As such, the model demonstrates the emergent and dynamic nature of strategic resilience. Consequently, strategic resilience is not a construct that can be measured at a moment in time, but rather, it is a quality or characteristic that is earned over time as a result of value creating metamorphoses.

**Limitations and suggestions for future research**

It has been shown that the insistence on seeking perpetual stability and sustained competitive advantage (Barney, 1991) is incongruent with reality (McGrath, 2013a). The age-old adage that “change is the only constant” (Crossan et al., 2005, p. 135) is therefore precisely on point. By asserting that the environment is complex, turbulent, and uncertain, and that survival is but a cursory outcome, this paper opens up new possibilities for the study of strategic resilience that is useful in the current reality whereby competitiveness is transient (McGrath, 2013b). The conceptual nature of this work can be seen as both a strength and limitation of the study. On the one hand, the conceptual inquiry of the concept offers clarity on a complex phenomenon, but on the other hand, empirical evidence is needed to provide a more thorough test of the concepts and their relations. Future research should focus on the factors or variables that promote strategic resilience. Although the propositions posited in this paper provide a first step in that endeavor, this study offers a limited investigation of potential factors. Further research is needed to investigate them empirically, and to suggest others that could be relevant to strategic resilience.

A limitation of this study that can be expanded in future research is to delineate the factors that promote resilience in different types of firms. For instance it has been noted that family-owned firms are “philosophically different” in that rather than focusing on short term profits, they focus of long term growth (Dobbs et al., 2015), and that social capital dimensions of family-owned firms (Yosra and Lassaad, 2015) positively impact performance. However, it has also been shown that family-owned companies are less adaptable than non-family owned companies (Schindehutte and Morris, 2001), a finding which would undermine the strategic resilience of those companies. Future research should not only test the relationship between the philosophies of family-owned firms and strategic resilience, it should also explore the factors that enable those philosophies and whether they can be usefully transposed or emulated. One such factor...
could be the role of transgenerational entrepreneurship (Jaskiewicz et al., 2015) and how it is nurtured so as to promote the entrepreneurial beliefs and behaviors that are important to strategic resilience.

Managerial implications
To start, it should be noted that although the focus of this study is not on resilience in the context of crisis management, the importance of having an organizational contingency and action plan for a variety of potential crises is certainly important. The context that pertains to strategic resilience as outlined in this paper, suggests that organizations should not take the environment as given and respond reactively but instead proactively reinvent themselves. In other words, even organizations that are very successful today need to change.

The suggestion that future oriented managers must challenge the limits of their vision and target their blind spots by asking broad questions that challenge status quo can seem unattainable for a manager concerned with day-to-day business. There is a clear contrast between the need for open-ended questions and broad exposure on the one hand and the propensity for the known, old habits, and rear view mirror forecasting on the other. Nevertheless, this study suggests that organizations investing in the former are more likely to successfully cultivate strategic resilience and be viable in the long haul.

At the heart of the model proposed in this paper is innovation. Innovation is both a vehicle of strategic resilience as well as a requisite of competitive advantage in a context of environmental turbulence, complexity, and uncertainty. As such managers must focus on the antecedents, beliefs and processes that nurture and support, first and foremost, innovation. To start, the model presented would suggest that it would be wise to regularly engage in self-analysis. Even if strategic resilience cannot be “measured” at a moment in time, there are other aspects of the organization that can be gauged in order to provide knowledge about important areas for improvement. For instance, it is possible to measure both adaptive capacity (Carmeli and Sheaffer, 2008) and absorptive capacity (Flatten et al., 2011) with established scales, the results of which can indicate where the organization may be lacking (and thus should work to remedy). For instance, low absorptive capacity, for example, could signal a need to dedicate increased resources to the exploration of external knowledge.

When it comes to the beliefs and behaviors of the TMT that are posited as important to the kind of innovation that will engender metamorphosis and ultimately strategic resilience, the TMT must be motivationally aligned and together believe in the importance of regularly challenging the status quo. As such, the TMT ideally includes members that have an entrepreneurial mindset and are future-oriented. In addition, in order to tap into their diverse knowledge sets (i.e. their unique resource), TMT members must engage in discussions that expose and challenge their perspectives that is part and parcel of strategic problem formulation. This will require not only a leader that can nurture and model the open and respectful behavior that is needed (Podsakoff et al., 1990) within the TMT, but also psychological safety (Edmondson, 1999). Psychological safety is defined as “a shared belief held by members of a team that the team is safe for interpersonal risk taking” (Edmondson, 1999, p. 350), and as such is a fundamental requisite of the kind of teamwork that is necessary of TMTs that wish to cultivate and nurture the strategic resilience of their respective organizations.

Conclusion
The importance of resilience to organizational renewal and survival is indisputable, but although we know what resilience looks like when we see it, we know little about how to develop and nurture it. This study contributes to this understanding by outlining boundary conditions and laying bare the core assumptions upon which the
conceptualization of strategic resilience rests. In addition, by conceptualizing strategic resilience as something that can be developed and nurtured, this paper suggests factors that can promote it. Doing so gives the construct practical relevance in a context of turbulence, complexity, and uncertainty where innovation and effective change are what makes it possible for organizations to thrive and persist.

References


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Resilience and effectuation for a successful business takeover

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Abstract
Purpose – The purpose of this paper is to explore how resilience can support entrepreneurs in uncertain environments. The study’s objective is to show how different dimensions of resilience (emotional/cognitive) are dynamically connected to different logics of actions (causation/effectuation) allowing the development of a successful entrepreneurial project.

Design/methodology/approach – The study is based on a qualitative analysis of a blog written by an entrepreneur during the first 17 months of a search, negotiation, and financing process for a company takeover.

Findings – The results highlight that in high uncertainty, strong entrepreneurial resilience and shift of logics of action can contribute to the success of a business takeover. This study identifies forms of resilience during the business takeover process that helped the entrepreneur overcome adversity and succeed. Moreover, these forms of resilience seem to be related to effectual and causal logics.

Practical implications – This study could help future entrepreneurs succeed in the creation or takeover of an organization by improving knowledge of the relationship between resilience and logics of actions.

Originality/value – This study proposes a different approach to the study of entrepreneurial resilience by analyzing it in relation with the logics of action (causation/effectuation). Moreover, the study offers a modern methodological approach by using an internet blog as a data source.

Keywords Small and medium sized enterprises, Effectuation, Business takeover, Entrepreneurial resilience

Paper type Research paper

Introduction

William Gartner (1988), discussing the entrepreneurial process, wrote, “How do we know the dancer from the dance?” This critical question was intended to orient research on behavioral as opposed to trait-based approaches, considered by Gartner to be unfruitful. Instead, Gartner (1988) claimed that research in entrepreneurship should focus on what the entrepreneur does and not on who the entrepreneur is. As he explains, because entrepreneurship is complex, in a behavioral approach “we do not artificially separate dancer from dance” (Gartner, 1988). Following this point of view, this study aims at understanding how resilience dimensions, at a psychological level, interact with logics of action (process level) to accomplish an entrepreneurial project in a context of high uncertainty.

There are different ways to become an entrepreneur, such as starting a new venture or taking over an existing business (Block et al., 2013). This study analyses a process of search and takeover of a business by an entrepreneur. Business takeovers are mainly studied in the succession in family firms (Block et al., 2013). However, sometimes the successor is an entrepreneur looking for a business opportunity, and not a family member. In such cases, identifying and evaluating the right organization to buy can take several months or even years. The opacity of the market of companies available for purchase presents a challenge (Fayolle, 2004). Successful companies do not want to
openly communicate their intentions to be taken over for fear of creating uncertainty among their stakeholders. As market information is difficult to obtain, the entrepreneur seeking to take over an organization faces high uncertainty.

From a behavioral perspective, different theoretical approaches exist in entrepreneurship research. Among them are the theories of effectuation and causation (Fisher, 2012). The concept of effectuation, introduced by Sarasvathy (2001), consists in choosing means to create particular effects, while causation consists in choosing effects using specific means (Sarasvathy, 2001). Even if those concepts seem to be in opposition, Sarasvathy (2001) explains that “both causation and effectuation are integral parts of human reasoning that can occur simultaneously” (Sarasvathy, 2001, p. 245). During an entrepreneurial process, both causal (planning) and effectual logics can be present in a complementary way (Sarasvathy, 2001; Read et al., 2009; Fisher, 2012; Reymen et al., 2015; Smolka et al., 2016) and the entrepreneur can navigate from one to the other.

Even if studies aim at defining and comparing effectuation vs causation, and accept that they are complementary, it remains a lack of explanation about how the entrepreneur shifts from one logic to the other, and what are the individual processes that will allow the change of logic. In entrepreneurship, uncertainty diminishes the utility of causal approaches or planning (Bird, 1988), and increases the need to adopt effectual methods (Sarasvathy, 2001). At the individual level, literature shows that adversity and uncertainty are overcome by the development of resilience (Bullough et al., 2014; Sutcliffe and Vogus, 2003). Resilience helps entrepreneurs to adapt after adverse circumstances (Bullough et al., 2014). Resilience allows the individual to stabilize their emotions and broaden their scope of attention (Fredrickson et al., 2003; Waugh, Wager, Fredrickson, Noll and Taylor, 2008; Waugh, Fredrickson and Taylor, 2008). Therefore, and considering that the entrepreneur needs resilient attitudes and effectual behaviors to deal with uncertainty, the aim of this study is to understand the relationship between resilience and logics of action. How does the entrepreneur make a change of logic and what dimensions of psychological resilience appear during the process? More than a descriptive approach, the objective is to show how different dimensions of resilience are dynamically connected to different logics of actions allowing the development of a successful entrepreneurial project.

The paper is structured as follows. The first section develops a theoretical framework at the two mentioned levels (resilience and logics of action). The second section presents the research design based on the analysis of an internet blog by an entrepreneur seeking to take over an existing business. The third section highlights and analyses the results. Finally, a discussion of the findings and their implications is presented.

**Theoretical background**

*Psychological resilience as a dynamic process*

Recent business and management research has begun to study the concept of resilience to understand why some organizations or individuals are more successful in overcoming unexpected, abrupt, and adverse events (Linnenluecke, 2015; Dewald and Bowens, 2010; Sutcliffe and Vogus, 2003; Masten, 2001). The subject has been studied both at the organization and the employee levels and encompasses different research streams from risk and disaster management, human resource management, supply chain management, and entrepreneurship (Fisher et al., 2016; Ayala and Manzano, 2014).

Resilience is the ability to respond, adapt, and start again after adversity. It has first been considered a personal factor (such as gender or business experience) and understood to be a stable personality trait reflecting flexibility to adapt to emotional events (Genet and Siemer, 2011). In this way, a resilient individual is robust, resourceful, perseverant, with high motivation and optimism (Coutu, 2002; de Vries and Shields, 2006; Ayala and Manzano, 2014; Fisher et al., 2016).
However, beyond being considered a personality trait, resilience can be interpreted as a dynamic process to deal with uncertainty (Sutcliffe and Vogus, 2003). In this viewpoint, resilience is a behavioral system in which “an entity (i.e. organization, unit, individual) interprets and responds to new challenges, depends on attitudes, expectations, feelings, and response possibilities derived from a history of prior experience (e.g. adaptation)” (Sutcliffe and Vogus, 2003). Therefore, resilience can be a learned behavior, developed over time (de Vries and Shields, 2006; Luthans et al., 2007).

Two psychological mechanisms appear when explaining resilience: the regulation of emotion (emotional resilience) and the flexibility of thought (cognitive resilience). Emotional and cognitive resilience are related to the emotional and cognitive adaptations the entrepreneur develops to overcome constraints. Fredrickson (1998, 2001) grounded the study of resilience in the development of emotions. Even if emotions are transitory, they lead to action in different ways. For example, a negative affect damages the capacity to recover from adversity and generates specific action tendencies (e.g. survive during adverse situation). Fredrickson et al. (2003) underline that positive emotions can undo the effects of negative emotions and allow the cognitive broadening of the individual. People exhibiting a lack or little resilience have difficulty overcoming adverse situations because they remain cognitively inflexible, developing depression and negative emotional states (Genet and Siemer, 2011). They will have difficulties to make sense of failure (Byrne and Shepherd, 2015).

In particular, emotional resilience is linked to emotional flexibility (Genet and Siemer, 2011; Gross, 2007; Ong et al., 2006) and can be considered as a positive behavioral adaptation after a negative event (Hayward et al., 2010; Ong et al., 2006). In fact, resilient individuals can adjust their emotions in the face of a stressful situation (Waugh, Wager, Fredrickson, Noll and Taylor, 2008; Waugh, Fredrickson and Taylor, 2008). Resilient individuals use their emotional resources only when it is necessary (when a negative emotion arises). Once stress is overcome, negative emotions no longer persist (Waugh, Fredrickson and Taylor, 2008; Ong et al., 2006; Tugade and Fredrickson, 2004).

Cognitive resilience (Dewald and Bowens, 2010; Genet and Siemer, 2011) is based on Fredrickson’s (1998, 2001) broaden-and-build theory of positive emotion. Positive emotions allow cognitive broadening, access to information and the exploration of other possibilities (Fredrickson, 1998; Isen, 2002; Fredrickson and Branigan, 2005; Genet and Siemer 2011). It improves resilience in a virtuous circle (Sutcliffe and Vogus, 2003), expanding learning in the long term and well-being (Fredrickson et al., 2003; Nath and Pradhan, 2012; Byrne and Shepherd, 2015). According to Genet and Siemer (2011), cognitive flexibility allows people to distinguish important information and to adapt to a changing environment. It broadens the scope of attention and action repertoire to analyze the situation (Fredrickson and Branigan, 2005). For example, Genet and Siemer (2011) indicate that cognitive flexibility enhances the size and range of the consideration set for a choice and helps the entrepreneurs to select, reject, and put in perspective relevant information and materials. Isen (2001) indicates that cognitive flexibility allows “to switch perspectives and see things in multiple ways and come up with viable solutions […] to cope with potential problems and avoid conflict.” Isen (2001) adds that people with positive affect tend to be more creative, flexible and altruistic in the way they solve problems and negotiate (i.e. try to obtain “the most of both sides”). They also decide in an “efficient, effective and careful” way and tend to avoid risk due to a higher sensitivity to loss (Isen, 2001). According to Genet and Siemer (2011), two cognitive processes are at stake: inhibition and shifting. Inhibition is about deliberately eliminating dominant or irrelevant information (Miyake et al., 2000). Shifting is a process of “switching back and forth between multiple tasks, operations, or mental sets and implicate the ability to accomplish a new operation in the face of proactive interference” (Miyake et al., 2000).

An entrepreneur looking for a company to take over will certainly face adversity and frustration because of the high level of uncertainty of the market. To continue with the
project, the entrepreneur will need to develop resilient attitudes of two kinds: emotional and cognitive. However, in parallel, the entrepreneur will need to navigate between effectual and causal logics to adapt to uncertainty.

**Effectuation and causation**

To understand how some entrepreneurs cope with the high uncertainty that characterizes business start-ups, Sarasvathy (2001) introduced the concept of effectuation in the early 2000s in opposition to the causal view of business creation based on opportunity discovery and planning. The concept is defined as a logic of action that begins with what is at hand, takes advantage of the unexpected, and develops action-oriented decision making (Sarasvathy, 2008; Sarasvathy *et al.*, 2014). Effectuation assumes that under conditions of uncertainty, entrepreneurs adopt a different operating logic. The opportunity initially perceived is not a clear goal and can change during the business start-up process. The underlying idea is that entrepreneurial behavior will be based on the availability of resources rather than on predetermined objectives. Instead of seeking optimization, the effectual entrepreneur attempts to minimize costs (acceptable losses) and securing resources involves the establishment of strategic alliances and the pre-engagement of stakeholders (Chandler *et al.*, 2011; Bhowmick, 2011).

Sarasvathy (2001) indicates that neither the causal nor the effectual logic is better, but one is more suitable than the other depending on the context. Effectual logic is most appropriate and efficient under uncertainty and limited resources (such as during the creation of activity). Causal logic is most adapted when the environment is stable, and the expected outcomes are known in advance. It is better suited for mature markets. Moreover, according to Fisher (2012), effectual and causal principles can work in a complementary way and the entrepreneur can navigate between both. It is then important to understand in which circumstances the entrepreneur develops a causal or an effectual logic (Sarasvathy, 2001; Read and Sarasvathy, 2005; Fisher, 2012). Several reasons explain that change (Harms and Schiele, 2012), such as the environment perception (uncertainty perception) or the expertise of the individual (control perception). Indeed, the entrepreneurs who have perceived that they can control what they have in hand and believe in their ability to transform their environment are those who can easily adopt an effectual behavior (Sarasvathy, 2001; Gabrielsson and Politis, 2009).

At an individual level, Alsos *et al.* (2016) and York *et al.* (2016) show that the choice between effectuation and causation comes from the preferences of the entrepreneur or their way of living (i.e. their social identity). Engel *et al.* (2014) indicate that those with more entrepreneurial self-efficacy will be more effectual. In this case, entrepreneurial self-efficacy reinforces the perception of control over opportunities. Effectuation is related to the entrepreneurial expertise of the individual (Dew *et al.*, 2009; Read *et al.*, 2009; Sarasvathy, 2001). The entrepreneurial expertise allows the use of heuristics (psychological shortcuts). The entrepreneur is a central agent capable of creating and transforming his/her environment (Alvarez and Barney, 2007). Effectuation is then used as a means to control the environment and causation as a predictive instrument (Read and Sarasvathy, 2005; Smolka *et al.*, 2016). Dew *et al.* (2009) show that the expert entrepreneur uses effectuation through analogical reasoning, he solves the problems by using previous experience and by diminishing the importance of predictive information (Read and Sarasvathy, 2005; Read *et al.*, 2009; Harms and Schiele, 2012).

In an entrepreneurial takeover, adopting effectual logic could help entrepreneurs face the uncertainty caused by the perceived opacity of the business takeover market. The entrepreneurial takeover also supposes the choice of an organization in an existent market, which will facilitate a causal approach. The context of this field allows then to study the shift of causal and effectual logics and to observe the conditions and circumstances of their development.
Our study shows that in uncertain environments, the shift to an effectual behavior and the use of heuristics is possible when the entrepreneur is capable of controlling his/her emotions. To the authors’ knowledge, there is a lack of information about the role of psychological variables, and especially resilience, in this change of behavior (shift between causal and effectual). Therefore, this study aims at filling this gap.

Research method
The objective of this research is to understand the roles that entrepreneurial resilience plays in the effectuation/causation change. In the next section, we present the context of the research and the methodology developed.

Research design and context
This study used a qualitative design. Many researchers promote qualitative research because it facilitates exploration of the potential antecedents and factors for which little is known or has been explored (Corbin and Strauss, 2008). Qualitative research provides deep descriptions of processes (Richards, 2009), appears amenable to further quantitative research (Eisenhardt and Graebner, 2007; Yin, 2003) and helps to answer new questions, particularly in a field such as entrepreneurship research (Cope, 2005; Hindle, 2004).

Within this broader qualitative design, this study implemented an analysis of an internet blog of an entrepreneur looking to take over a business venture. A blog is a shortened version of the term “web log,” with log meaning event log. According to Poynter (2010), a blog is a website organized as a set of chronological posts by an author or authors. Blogs were one of the first social media tools to be adopted by market researchers.

This research focused on the set of posts with a narrative approach (Elliot, 2005). A narrative is a discourse that provides insights into events and individuals’ experiences to connect events in a meaningful way (Hinchman and Hinchman, 1997). A narrative allows the registration of events chronologically by taking into consideration the temporal dimension and achieving the effect of coherence that Ricoeur (1983) called a configuration effect. As Karl Weick asks in several of his works, “How can I know what I say and do?” a narrative is not simply a reference to the action envisaged, it also provides meaning to the action by incarnating the action. Therefore, discussing an entrepreneurial process is a way to clarify the process for others. Initially, this is a way to show and demonstrate the project before it really exists. During the process and the implementation of the necessary actions, providing such a narrative helps to link the first concrete elements and the strategic objectives. Entrepreneurship research notes the use of a narrative perspective as a suitable mode for producing local and contingent knowledge concerning the entrepreneurial process (Venkataraman et al., 2013; Gartner, 2007; Rae, 2000; Steyaert and Bouwen, 1997).

Data collection
This study is on a French entrepreneur, Sébastien Eloir, who intends to take over a business. His personal and entrepreneurial profile corresponds to the profile described by the French Center of Business Takeover (CRA) in their 2017 rapport[1]. Eloir is a 38-year-old man, married, and living with his wife and children (two girls) in a suburb of Paris. He has a significant upper management experience (14 years) as a managing director of an organization specializing in the distribution and rental of technical machines.

The authors selected the case from social media from the blogosphere. For Nardi et al. (2004), blogging is a social activity motivated by five social objectives: to inform others of activities and whereabouts, to express opinions to influence others, to seek the comments and opinions of others, to “think by writing,” and to express emotional tension.
Eloir’s blog was found through a Google search using key words[2]. The blog can be easily accessed (http://objectif-reprise.blogspot.fr/). No registration was requested and information on the blog has been posted on a public domain for free and is available to researchers.

Data were collected from entries posted by the entrepreneur during the process from the initial search to the end of the takeover process. Each week, from April 2006 to September 2007, the entrepreneur posted an entry reporting on the progress of the business process and reported on other aspects related to this process such as problems, feelings, or alternatives. A total of 78 weekly entries were collected covering the entire business takeover period. Given that blog entries were written in real time and posted on a weekly basis, contemporaneously, there is no bias from retrospective analysis (ex-post rationalization). Because the objective of this research is to improve entrepreneurship knowledge, the age of the data (roughly ten years) should not be an issue. It can be said that the writer is “in the thick of things” (Yanow et al., 2012, p. 352). This granted researchers full access to the opinions, comments, feelings and expressed emotional tensions of the author of the blog. At the end of the process, the entrepreneur stopped blogging and decided to create a second internet blog (http://objectif-entreprendre.blogspot.fr/). This second blog was analyzed and contained 32 entries posted over the first three years following the business takeover. This blog enabled the study to assess the viability of the business takeover[3].

Data analysis

For the data analysis, this study followed a qualitative content analysis based on an interpretative study. The content analysis is adapted to extract the presence or absence of specific concepts within texts or other material (Corbin and Strauss, 2008).

The objective of the study is twofold. First, to identify the dimensions of entrepreneurial resilience and the ability to adopt effectual/causal logic during the process of a business takeover. Second, to highlight the role of dimensions of entrepreneurial resilience and how these dimensions connect with effectual or causal logics. The definition of concepts (causal and effectual logics of action, and emotional and cognitive resilience) and the examples of verbatims identified for these concepts are represented in Table I.

The qualitative data collected for the study correspond to 78 posts from the blog of an entrepreneur (from April 2006 to September 2007). Based on the volume of data, researchers opted for a manual analysis. The analysis started by a data simplification strategy through data coding phase (Miles and Huberman, 1994). This phase was structured in three steps: data preparation (extraction of the posts from the blog and chronological ordering in an excel document), data organization (first descriptive coding), and topic coding (Miles and Huberman, 1994; Bernard and Ryan, 2009). Preparatory tasks before data coding consisted in highlighting relevant parts on the posts to discard data unrelated to the research questions (Miles and Huberman, 1994). For the descriptive coding, all 78 posts were analyzed to understand the different steps along the entrepreneurial process. Double coding, as recommended by Miles and Huberman (1994), was conducted to check the reliability and validity of descriptive coding. Two authors carefully and separately read through the text and the analysis was confirmed in detail with a general agreement, after several discussion meetings by all team members.

The 78 posts were split into five phases following the approach presented by Reymen et al. (2015). The study of Reymen et al. (2015) analyses the change between effectual and causal logics during a process of venture creation. To explain the shift, the authors focus on key decision events. Those events, to be considered, have to produce a significant effect on the development of the company and have to be connected to an intentional action or decision of the entrepreneur. The intentionality has to be strong and the decision has to be initiated by the entrepreneur. Moreover, the idea of separating the process into different phases of analysis follows the classification of Fayolle (2004). Fayolle (2004) is one of the few authors to analyze the process of business takeover from the buyer’s side. The author
Psychological resilience


Anticipation and adjustment of negative emotions

The use of emotional resources when necessary and the non-development of emotional resources during innocuous events

Recovering

Allow quicker and more complete affective recovery.

Even if it was hard, I drew from this trip only the positive (Post 21)

Inhibition

Inhibition of dominant responses and the processing of irrelevant material

I could have chosen the air conditioning option with its exponential development, but it seems to me particularly energy-consuming and therefore off-topic. I stopped looking for this type of business (Post 15)

Shifting

Switching back and forth between mental sets (by activating relevant material and disengaging from irrelevant material)

Another solution would be to follow a training outside Paris […] easier because there are fewer candidates but more difficult to manage on the family level! (Post 15)

Cognitive resilience (CR) (Genet and Siemer, 2011; Isen, 2001; Miyake et al., 2000)

Logics of action

Effectuation (E) Sarasvathy et al., 2014; Read and Sarasvathy, 2005; Sarasvathy, 2001)

Means oriented

Starting with means (what you are, what you know, and who you know)

I will wait to see the advisor of the ANPE (National Employment Agency) to verify if I can have a subsidy (Post 3)

Affordable loss

Invest what you can afford to lose (minimize costs)

I did it and was determined not to give up! I contacted the Regional Council immediately to find out if they had more information than me (Post 61)

Partnerships (Crazy quilt principle)

Establishing and leveraging strategic relationships using pre-commitments

Tomorrow I will go to the agricultural exhibition with the seller. […] It is a fabulous opportunity to strengthen ties and to confirm our mutual intention to transmit/takeover (Post 45)

Leveraging contingencies

Contingencies as opportunities need to be leveraged

Causation (C) Sarasvathy et al., 2014; Read and Sarasvathy, 2005; Sarasvathy, 2001)

Goal-oriented

Starting with ends: goals determine actions

I am always looking for a ‘climate engineering’ training course in order to make my application more credible (Post 7)

Table I.
Definition and example of main theoretical concepts

(continued)
presents the process in several phases: personal assessment and definition of the project; identification of sources of information, construction of the network, and target selection; diagnosis of the target company and drawing up of the business takeover plan; negotiation and contracting, and finally the actual transfer of ownership and control.

The analysis of the blog allowed the identification of five key decision events: the decision to leave paid employment and to take over a business; the selection of a project and the failure of the operation; the decision to continue the search for a business to take over despite the failure of the first attempt; target selection and diagnosis for a second project; and the search for funding and drawing up of the business takeover plan.

The first phase is composed of two parts (Steps 1.a and 1.b) and the last phase was split into four steps (5.a, 5.b, 5.c, and 5.d). The decision to consider sub-steps is based on the observation of events disrupting the progress of the observed phase. In Phase 1, following the decision to take over a company, the entrepreneur realizes the opacity of the takeover market. This information will change the way he looks at the market. In Phase 5, the search for funding is troubled by several refusals and waiting periods before the takeover can be done. Table II presents a description of each phase with information about the corresponding blog posts.

Succeeding the chronological understanding of the process, a second data coding was performed using meaning unit. In the literature, a meaning unit is also called an idea unit (Kovach, 1991) or content unit (Baxter, 1991). In this study, we have adapted Graneheim and Lundman’s (2004, p. 106) definition of meaning unit to include, “words, sentences or paragraphs containing aspects related to each other through their content and context.” The data were then indexed according to our research objectives from the literature review on entrepreneurial resilience and effectuation/causation and linked with the phases of the process to understand the data in context.

The richness of the blog allowed the authors to find several dimensions of resilience. However, for the scope of this study two forms of resilience were identified and used, cognitive and emotional (Sutcliffe and Vogus, 2003; Waugh, Wager, Fredrickson, Noll and Taylor, 2008; Waugh, Fredrickson and Taylor, 2008; Dewald and Bowens, 2010; Hayward et al., 2010). The choice was based on the emergent relationship noted in the discourse between those dimensions and the two logics of action. Concerning entrepreneurial logics of action, segments of text were coded referring to the principles of effectuation and its causation counterparts (Sarasvathy, 2001; Fisher, 2012; Sarasvathy et al., 2014).

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<tr>
<th>Expected return</th>
<th>Selection criteria based on expected return. Pursuing the opportunity and raising required resources to do so</th>
<th>The transaction will not happen because I consider that the company is overvalued and especially that the commercial environment does not have enough potential (Post 18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive analysis</td>
<td>Relationships are driven by competitive analyses and the desire to limit dilution of ownership as far as possible</td>
<td>The initial objective was to work on green energies because it is a growing market and it is important to do something for the planet (Post 28)</td>
</tr>
<tr>
<td>Avoiding contingencies</td>
<td>Contingencies are obstacles to be avoided, based on accurate predictions and careful planning</td>
<td>The objective is to keep control from A to Z (Post 12)</td>
</tr>
</tbody>
</table>

Table I.
A preliminary indication of reliability obtained between encoders was around two thirds for resilience factors and three quarters for the principles of effectuation. This reliability was in line with Miles and Huberman (1994) to not expect initially more than 70 percent of reliability between encoders. Data coding was discussed by the authors and disagreements regarding the interpretation of the data were resolved through discussion and several tours of iteration between the literature and data.

Results
During the research process, the entrepreneur faced several problems including negative thoughts, frustration, and feelings of distress that could have been discouraging and make the entrepreneur return to the job market. However, instead of abandoning the project the entrepreneur developed a resilient behavior that, combined with effectual logic, allowed a refocus to continue the search until a satisfactory outcome was achieved.

This section presents and explains the results of this study. The analysis focused on two forms of resilience (cognitive and emotional) and two logics of actions (causal and effectual). Table III presents the dominant logics of actions and the mechanisms of resilience associated with each phase of the entrepreneurial process. Results show the alternative development of logics of actions and the presence of dimensions of resilience that appear connected with those logics of actions.

To facilitate understanding, the results are shown in two parts. The first part shows the perceived links between emotional resilience and effectual logic, while the second part explains the links observed between cognitive resilience and causal logic. To support the explanations, some quotes from the entrepreneur's blog are presented. Quotes were translated from French into English by the authors.
Emotional resilience and effectual logic

Emotional resilience appeared as a compensatory mechanism in the face of an emotional impact caused by an adverse or stressful situation. In the analysis of the blog, emotional resilience appeared several times especially during effectual phases (1.a, 2, 4, 5.b, and 5.d).

Phase 1a (Posts 1-5). It is important to understand that the entrepreneur showed a predisposition to resilience from the moment he started the blog (“in my previous job I learned that I had the ability to bounce back and especially to accept what suits me”). He expressed this ability through a positive emotion, which follows a negative one (doubt):

- From my previous job, I will keep the memory of the difficulties faced, and the great moments of doubt (negative emotion).
- Above all, I will remember this immense solidarity and the involvement of the majority of colleagues to change the catastrophic situation in which the organization was. For now, it’s the most important human experience of my professional life! (positive emotion).

Byrne and Shepherd (2015) say that when an individual tries to find a meaning to a negative situation, he/she develops a psychological resilience.

When he started the blog, the entrepreneur faced a stressful phase of reconversion needing to understand the new world of the takeover after leaving a job that lasted 14 years. There was also a need for patience even if there was insufficient time to develop the project. All of these aspects generated stress (negative emotion):

- I’m in a professional no man’s land (Post 4).
- I know it’s going to be tough and long, but I’m ready for it! (Post 3).
- Still a little more patience (Post 3).

As mentioned in the theoretical part, several strategies of emotional adjustment can be developed to face stressful situations (anticipation, adjustment, recovering). The entrepreneur developed all those strategies. For instance, he counterbalanced his guilt about taking some days off (“and even if I take some days off, Post 2”) with positive actions on the short term (to spend time with his daughter or to exercise), and he justified his actions:

- I took the opportunity to drop my daughter to school (positive action). I learned the lesson, you have to know how to take advantage of these moments because they will not be eternal! (Uncertainty about the future) (Post 2).
- And, as long as I’m here, I set myself the goal of losing some weight by the end of May. (Hope, optimism) (Post 2).

<table>
<thead>
<tr>
<th>Reference</th>
<th>Dominant logic of action</th>
<th>Dominant resilience mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.a (Post 1-5)</td>
<td>Effectual</td>
<td>Emotional</td>
</tr>
<tr>
<td>1.b (Posts 5-20)</td>
<td>Causal</td>
<td>Cognitive</td>
</tr>
<tr>
<td>2 (Posts 21-25)</td>
<td>Effectual</td>
<td>Emotional</td>
</tr>
<tr>
<td>3 (Posts 26-44)</td>
<td>Causal</td>
<td>Cognitive</td>
</tr>
<tr>
<td>4 (Posts 45-50)</td>
<td>Effectual</td>
<td>Emotional</td>
</tr>
<tr>
<td>5.a (Posts 51-59)</td>
<td>Causal</td>
<td>Cognitive</td>
</tr>
<tr>
<td>5.b (Posts 60-63)</td>
<td>Effectual</td>
<td>Emotional</td>
</tr>
<tr>
<td>5.c (Posts 64-68)</td>
<td>Causal</td>
<td>Cognitive</td>
</tr>
<tr>
<td>5.d (Posts 69-78)</td>
<td>Effectual</td>
<td>Emotional</td>
</tr>
</tbody>
</table>

Table III. Effectual/causal logics and emotional/cognitive resilience during the business takeover process
The entrepreneur showed an emotional resilience. He regulated his stress (days off/start of the takeover process) by driving his daughter to school and exercising. He did not solve the problem but he overcame the negative emotion through an action and a justification.

We can understand the expressed feelings through the many blog comments, the use of exclamation marks and sentences showing goodwill, or both at the same time. In this case, emotional resilience developed as a counterpart to feelings associated with stressful situations:

- I will need to stay alert; I'll have to stick at it (Post 4).
- Good lesson of patience! (Post 4).

He rationalized, “I also believe that this period is a transition period necessary to achieve the ‘transformation’” (Post 4). The entrepreneur’s emotional state was also successfully tempered by a change of outlook on situations and showing acceptance:

- It was tough but necessary (Post 4).
- I think this is a period of transition, it is necessary to do the change (Post 4).

At the same time, the dominant logic of action during this first phase was effectual. Effectuation meant that the object was still under construction, and the opportunity was not a clear objective and could change. The focus in this phase was on available resources. In this environment, he has to make small iterations, to see who wants to build the project with him, who are the potential partners with whom he can interact. In this study, the entrepreneur had an idea to take over an organization in the renewable energy market but needed to check the availability of resources after starting initial contact with some classic public institutions. The decision to contact those institutional resources could be considered as starting with means at disposal, and looked for available resources (people, money, time) through institutional networks. The entrepreneur obtained an unemployment subsidy for 700 days through an institutional network for the takeover project. This situation corresponded to the effectual principle of affordable loss, in which the entrepreneur took into consideration the amount of resources (time, money) that he agreed could be lost. In this case, it represented 700 days (time) to succeed in the takeover:

- I have 700 days of subsidy. I will do my best to do the takeover in less time than 700 days! (Affordable loss, Post 4).

The entrepreneur also tried to integrate people in an effectual way to participate in the project. This behavior corresponds to the crazy quilt principle. According to Sarasvathy et al. (2014), an effectual approach calls for entrepreneurs to rapidly engage in conversations with a variety of people they already know or meet, some of whom end up making actual commitments to the new venture (see also Read and Sarasvathy, 2005). Effectual entrepreneurs seek to create avenues for stakeholder self-selection (pre-commitment). The entrepreneur actively engaged in the search for partners, among them G., who is referred to as a “potential associate”:

- Last Monday, we talked during 4 hours (pre-commitment, Post 4).
- I’m sure that we are complementary and we both have an interest in this collaboration (pre-commitment, Post 4).

According to the analysis of the blog, the entrepreneur developed effectual processes during the first phase (1a). At the same time, verbatims associated with the feelings of the entrepreneur show the presence of emotional resilience to cope with the stressful situations of this phase.
Phase 2 (Posts 21-25). The association between emotional resilience and effectuation is also identified during the first attempted takeover (Phase 2). The entrepreneur tried to transform the owner of the considered organization into an effectual partner for the project (means oriented “who you are” and pre-commitment):

- During the second meeting, I tried to understand if the owner could see me taking his place. I also remained open to collect all pieces of information possible through our talk (Post 22).

However, the entrepreneur saw difficulties in the relationship:

- Simply because I think the owner has made the organization in his own image, and if it doesn’t work between us, it is impossible that it will work between the employees and me (Post 21).

The entrepreneur then decided to anticipate failure of the operation and advanced emotional resilience. According to Waugh, Wager, Fredrickson, Noll and Taylor (2008), the anticipation of potential failure corresponds to a resilient behavior:

- I’m thinking about what I’m going to do if I cannot conclude this operation in Nantes (Post 23).

Anticipation helps to manage negative emotions in the face of a possible failure. When failure occurred, the entrepreneur continued to appear optimistic, even with Post 25 being published two days after the expected date (necessary time to recover from frustration):

- That’s the way it is, but I have learned a lot with this operation in Nantes (Post 25).

Phase 4 (Posts 45-50). The analysis of the blog shows that the relationship between emotional resilience and effectual logic was present during Phase 4. At that moment, the entrepreneur found the right organization to take over and then needed to organize the transition. Both the buyer and the seller agreed to work together (pre-commitment), but the situation was stressful:

- I imagine that it is stressful for him as it is for me, I’m a little stressed (Post 48).

The stress was counterbalanced by positive emotions (emotional resilience) and anticipation of the event:

- I remain nevertheless determined and ready to commit to the project!!; It’s achievable!!; The great leap into the unknown! (Post 48).

The anticipation is reflected in the emotional stability that Eloir showed when signing:

- It was an important moment, but I was not as moved as I expected. No tears, no pinching heart at the time of signing, the signature simply strengthened my determination to complete the buyout project, to join the team in place and make them part of the company’s growth (Post 49).

Once the emotional aspect was settled through resilience, he started again on a causal logic (“From now on I have four main objectives in view”). It thus appears that the emotional resilience is a safety valve to regulate emotions when stress becomes too important.

Phase 5b (Posts 60-63). Two other phases presented relationships between emotional resilience and effectuation. Both concerned difficulties with obtaining funding for the operation. During the first one (Phase 5b), the public institution that should have guaranteed the loan refused to do so. Faced with this problem, the entrepreneur developed an effectual reaction by immediately contacting the institution to try to understand the refusal and find a solution to the problem. This reaction can be interpreted as an effectual principle where the entrepreneur is capable of changing the environment instead of accepting the situation. The network was contacted to acquire more information about this refusal:

- I contacted the Regional Council to see if they had more information than me (means oriented “whom you know” and leveraging contingencies, Post 60).
Several other references about the effectual network (pre-commitment and leveraging contingencies) are identified in the discourse:

- After all, a bank is continuing to believe in the project and to support me. I will thank her when the time comes (Post 60).
- By the way, I also thanked “my” transferor for his support in this rather difficult phase. [...] His support is paramount (Post 60).

The rapid recovery process and the positive emotion (faith) showed emotional resilience:

- When you hear this answer over the phone, after 6 months of working on the feasibility of taking over the business, you have to be strong to want to continue without getting discouraged! Keep faith in all circumstances! (Post 60).
- That is what I did, well determined not to give up! (Post 60).

*Phase 5d (Posts 69-78).* The last effectual phase corresponded to the stress created by the timing for the loan. Indeed, the loan was needed during the month of August and it was late summer time in France with institutions either closed or working less hours. However, the entrepreneur tried to be proactive (means oriented “whom you know” and leveraging contingencies) and accelerate the process. Showing patience (emotional adjustment), the entrepreneur adapted his behavior to the situation and also took a short vacation (lemonade principle):

- I wrote it: patience is a virtue!! (Post 71).
- I took one week vacation during which I tried to contact the bank branch to find out what was going on with the loan offer (Post 71).
- I took advantage of the summer to advance on product marketing, a new website, setting up a server and an EBP network version. What happiness! (Post 72).

Over all the process, we can identify effectual behaviors supported by emotional resilience. Considering this, we can advance our first proposition:

**P1.** Emotional resilience allows the development of effectual logics of action.

Indeed, effectuation appears when there is a strong perception of an uncertain environment (Reymen et al., 2015). This study shows that when the environment is uncertain (following a contradictory event), the shift to effectuation and the development of heuristics need a stable emotional state to compensate for the instability of the environment. Emotional stability seems then necessary for the development of the effectuation.

*Cognitive resilience and causal logic*

Throughout the blog, it seems that cognitive resilience appears whenever the entrepreneur develops a causal strategy.

*Phase 1b (Posts 5-20).* During the first phase the entrepreneur understood the complexity of the market and the fact that in the Paris region there are more entrepreneurs searching for companies than companies on sale. He also saw the difficulty of discovering those opportunities. This new and unexpected piece of information created stress:

- I have arrived at an important information juncture. The takeover market is imbalanced in Paris, there are more buyers than sellers (Post 5).

To counterbalance the stress, during the first phase (Phase 1a), the entrepreneur controlled emotions by developing emotional resilience. Then, once emotions became stable, cognitive resilience emerged. Cognitive resources are easily developed in stable emotional states.
Fredrickson et al., 2003; Byrne and Shepherd, 2015) and are linked to “the enthusiasm with which entrepreneurs form positive judgments” (Hayward et al., 2010). Through cognitive resilience, the entrepreneur started thinking about the problems of the takeover. Cognitive resilience enlarges the scope of possibilities as explained in the Broad and Build theory of Fredrickson (2001), and broadens the scope of attention and performance.

Cognitive resilience was initially oriented toward a causal strategy with the entrepreneur lacking the business know-how to take over an organization in the sustainable energy industry and had to find the means to reach the fixed objectives by first looking for training courses to help him (goal-orientation “starting with ends”):

- Training at the CRA (Center for Business Takeover) should provide me with some elements necessary to answer these questions (Post 5).
- I am also looking for a “climate engineering” training to give credibility to my application (Post 7).

The entrepreneur decided to pursue a training course on takeover (CRA training). During the four weeks training, he learned about management. A causal orientation emerged, and the objectives were clearly explained (goal-orientation “starting with ends”). At that moment, the entrepreneur also broadened the search to include companies beyond the Paris region:

- Here are all my targets: a SME in the heating sector with a turnover of between 1 and 3 M€ therefore between 10 and 30 employees located anywhere in France except in the North and East (I estimated that there were about 200 to 300 companies likely to be sold in France) (Post 13).
- A difficult part of my business takeover project starts, which will determine its success because it is the first step: the one during which it is necessary to find companies that correspond to the desired target (goal-oriented, Post 13).

To reinforce the idea of a causal strategy (planned), a comparison to a sportive marathon or hunting is made. The entrepreneur described this causal strategy as a “hunting technique” (Post 13). G is also integrated in the discourse in a causal way without considering if G needs to be convinced (see Step 1a). G is considered inside the project (goal-orientation “starting with ends”):

- I believe in the coherence of the business plan I mentioned to you last week, in our capacity with G. to manage this type of business and to develop it, and I do so without exaggerating, and without false modesty (Post 13).

From that moment, Eloir showed cognitive flexibility in the way he considered information. New information is integrated into his thought process or is eliminated according to whether it allows him to advance or not. The ability to select information and know how to eliminate the least important (irrelevant information) is considered as one of the characteristics of cognitive flexibility (Genet and Siemer, 2011; Isen, 2001; Miyake et al., 2000):

- Sometimes you have to know how to go fast, but you also have to know how to take your time [...] (…) And then, I’m always suspicious of (false) good first impressions (inhibition, Post 17).

Two main aspects showed the flexibility of Eloir’s thought process: the search for technical training enabling him to acquire the necessary knowledge for the takeover, and the selection of files:

(1) To take over a business in heating, Eloir initially thought that it was better for him to acquire technical knowledge (taking into account relevant information):

- This is one of the cornerstones of the takeover project and especially of commercial development; The more I talk about it around me, the more I realize that it is crucial to have the technical control, not only for the commercial offer but also for the management of the organization (Post 16).
This allowed him to be less dependent on his future employees or partners (avoiding contingencies):

- Training [...] would give me the technical and commercial dimension which would allow me to concentrate on the management and the commercial aspects of the business and not to depend at a technical level either on a specific employee or on the training carried out by the transferor (Post 16).

He made an evaluation of the different information he obtained during different technical training courses, comparing the advantages and disadvantages of each (level of training, location):

- The trainings offered vary in their level and duration but revolve around the desired subject: heating! (taking into account of information, Post 16).
- I always hesitate between 2 levels of training. I already addressed the subject a few months ago on this blog and have still not managed to decide: basic training or more “advanced” training? (switching between information, Post 16).

(2) Second, when selecting the files, he added the financial aspects (learned during the training), and also the human factors. This integration was the result of a discussion he had earlier with another entrepreneur about the importance of such information. Those aspects were then integrated into the reflection of Eloir:

- Last week, I visited a buyer who confirmed what was said: the success of the takeover depends essentially on the human factor (taking into account relevant information, Post 17).
- Balance sheets and profit and loss accounts do not explain the culture of an organization, neither the human relations nor know-how [...] (taking into account relevant information, Post 17).

Cognitive resilience seems then to reinforce causal thinking by shifting between new information and objectives. At the end of this phase, a firm in Nantes was selected.

Phase 3 (Posts 26-44). After the failure of the takeover of Nantes (Phase 2), the entrepreneur came back to a causal logic and questioned the final objective (starting with ends) and the rentability of the market (analyzing expected returns):

- The initial objective was to work at the local level in renewable energies for two reasons: this is a market that will have sustained growth in the years to come; It is urgent to act for the planet and to get personally involved (Post 28).
- The search for a heating / plumbing organization represents for me the coherent strategic solution that allows living until this market reaches a sufficient degree of maturity (Post 28).

During this phase, the entrepreneur experimented with cognitive resilience (about wants and conditions), and was causal. Cognitive resilience appeared in the way Eloir indicated how he selected firms by trying to take relevant information and eliminating irrelevant ones (shifting):

- It is essential to remain realistic, to see the positive points of each file and to try to anticipate the negative ones and at some point to stop thinking and to move forward because there is no ideal business (switching between information, Post 27).

Like in Phase 1b, this cognitive resilience leads to a causal way of thinking:

- In this case, what return should be expected from an investment in an SME? 10, 15, 20 or 25 percent? It seems reasonable to expect at least between 10 and 15 percent with regards to the level of risk (Expected return, Post 30).
Market research determines, in particular, the business plan assumptions and must reassure the buyer on his/her understanding of the activity of the target organization (especially when it is not from the sector). (doing competitive analysis, Post 39).

This causal phase drove the entrepreneur to a new prospect, an organization near Bordeaux, which proved to be a good fit. The blog entries show causal thinking in this phase:

- The questions on which we had to agree were: What is the value for the transferor? How much is it theoretically worth? (through the different financial methods available); How much can I pay considering the parameters related to the financing (personal contribution, participation or not of the transferor, possibility of debt …) And in the end, according to the different preceding parameters, how far am I willing to go as a buyer and willing to accept? After a few hours of negotiation, we finally agreed on a price (expected return and avoiding contingencies, Post 42).

- I still have to close the takeover Business Plan with, in particular, the market research part, the provisional income statements, the financing plan, and the cash flow plan (Goal-oriented, Post 42).

**Phases 5a and 5c (Posts 51-59 and 64-68).** The last two phases corresponded to causal periods during which the entrepreneur tried to find funding for the operation (goal-orientation, starting with ends):

- I had a series of meetings with banks this week […] As I announced last week, I presented a complete project, built on four parts: (the entrepreneur, the organization and its market, the forecast and the financial elements) (Starting with ends, Post 53).
- I will also see the bank to fix the final points and agree on a closing date. I really hope that there will be no last-minute surprise […] (avoiding contingencies, Post 64).

During these two periods, there was also a cognitive resilience in the way the entrepreneur asked questions about the problems and considered solutions:

- I do not understand the reasoning behind this refusal (Inhibition, Post 58).
- Even if the CRA training is interesting, there are so many details that it is essential to be accompanied! (taking into account relevant information, Post 66).

From those observations, we propose a second proposition:

**P2.** Cognitive resilience is often related to causal principles of action.

Indeed, cognitive flexibility seems to guide causal thinking: the progress of the project and the reduction of uncertainty allow the cognitive flexibility (selection and rejection of contradictory information) that is necessary for a process of causal reflection.

**Discussion**

In the literature in entrepreneurship, effectuation is defined as a logic of action (Sarasvathy, 2008; Sarasvathy et al., 2014). It assumes that under conditions of uncertainty, entrepreneurs adopt a different operating logic in which the entrepreneurial behavior is based on the availability of resources rather than on predetermined objectives. Also, adversity and uncertainty are overcome by the development of resilience (Bullough et al., 2014; Sutcliffe and Vogus, 2003). Therefore, the entrepreneur needs resilient attitudes and effectual behaviors to deal with uncertainty.

Following Gartner (1988), this study analyzes the interaction between the dancer (entrepreneur) and the dance (logic of action), assuming that the change of logic of action is favored by certain individual characteristics. The aim of this study is to understand the change of logic of action (Sarasvathy, 2001; Alsos et al., 2016; Engel et al., 2014). How does
The entrepreneur make a change of logic and what dimensions of psychological resilience appear during the process?

The entrepreneurship literature emphasizes that the preference between causal and effectual actions is strongly related to the choices the entrepreneur makes in uncertainty. From this perspective, some individual characteristics influence the effectual process such as expertise (McKelvie et al., 2011; Dew et al., 2009; Read et al., 2009), self-efficacy (Engel et al., 2014), and social identity (Alsos et al., 2016; York et al., 2016). York et al. (2016) also emphasize that the less clear the goal for the individual, the more effectual the decision will be.

This study identifies forms of resilience during the business takeover process that helped the entrepreneur overcome adversity and shift between causal and effectual logics. Results show that the level of uncertainty around the project varies over time. There are stress phases that the entrepreneur must control. The ability to control the stress has its origin in the resilience of the entrepreneur. In this study, the resilience of the individual (a component of psychological capital) facilitates the change of logic and the development of effectuation, improving the adaptation to complex and uncertain situations.

However, the literature also shows that the effectual principles improve the resilience of individuals and organizations. The ability to adapt to uncertain situations has its origin in the setting up of certain logics of action (Maine et al., 2015). Resilience and effectuation are then in interaction. This study shows how different dimensions of resilience are dynamically connected to different logics of actions allowing the development of a successful entrepreneurial project.

**Conclusion**

For individuals creating or taking over a business, one crucial aspect is how to deal with uncertainty. This study can help entrepreneurs to succeed in a business creation or takeover by improving knowledge of the relationship between resilience and logics of actions. It sheds light on the way to overcome adversity during the start-up process. It seems that emotional resilience, the capacity of the individual to regulate emotions during periods of stress, enables the necessary space to develop cognitive resilience (cognitive adaptation to solve a problem).

From a theoretical point of view, this study suggests a process for entrepreneurial resilience. In entrepreneurship, resilience is traditionally considered a characteristic that allows serial entrepreneurs to create new ventures after failure (Bullough et al., 2014). The analysis of the entrepreneurial takeover shows that factors of resilience are present throughout all stages of the process (opportunity recognition, negotiation, and financing). Therefore, resilience allows the individual to continue the entrepreneurial process after each obstacle, and can help reducing failure. This study also complements the literature on logics of action. Effectuation and causation are complementary behaviors (Sarasvathy, 2001; Read et al., 2009; Fisher, 2012; Reymen et al., 2015; Smolka et al., 2016). The shift between effectuation and causation logics has been explained through different aspects; however, how this change occurs has not been investigated. Since resilience is the propensity to act under adversity (Bullough et al., 2014) through regulation of emotions and expansion of cognitive structures and thoughts (Byrne and Shepherd, 2015; Genet and Siemer, 2011), it can allow us to understand how entrepreneurs react when uncertainty rises, navigating between different logics of action.

To extend the understanding of entrepreneurial resilience and logics of action, it can be interesting to analyze the development of resilience with respect to the various entrepreneur profiles. In this study, the age and human capital (level of education and managerial experience) of the entrepreneur perfectly match the literature on entrepreneurial takeovers according to which buyers have more managerial experience and a higher average age than
creators (Bastié et al., 2013; Block et al., 2013). But, what happens in the case of a new venture creation? If resilience is learned through life experiences (de Vries and Shields, 2006), there may be a relationship between entrepreneur profiles, learning, experience, and the development of resilience. Also, experienced entrepreneurs develop more effectual approaches than causal. We can then ask if managers, in the middle of their working careers, will be able to develop resilient characteristics and effectual processes more easily than other individuals. How to help young entrepreneurs to be more resilient and flexible to succeed a business creation? These are some of the new questions that arise from our study, and that could become interesting topics of research.

Finally, this research was exploratory, and evidence was collected from a single source: a French blog. Although this can ensure the reliability of the results, it potentially limits their generalizability. The blog may not adequately reflect the experiences of the entrepreneur because he decided on what he wrote about. In this study, it was neither possible to orient the entrepreneur to describe a fact nor to ask him for more information. The analysis was limited to the information shared by the entrepreneur in his blog. The blog is written data, and in this way, it is considered an approximative reflection for the understanding of the studied behaviours. However, the blog is rich in description of the feelings expressed by the entrepreneur at the different moments of the process; this information was useful to understand resilience.

Notes
2. Several keywords in French were used. Among them: takeover’s blog, business transfer, takeover, buyer, seller, entrepreneurship, etc. In total, 33 blogs have been selected and studied regarding their contents and the quality and quantity of the shared information. After the first screening, Eloir’s blog was chosen for this study because of its regularity and the richness of the communication.
3. Ten years later the organization continues to grow. It consists of 12 employees and sales of € 1.850 M (2016). In 2015, the organization name was changed to Sylvinov and aimed to go global (www.sylvinov.com/fr/).

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The resilient retail entrepreneur: dynamic capabilities for facing natural disasters

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Abstract
Purpose – The purpose of this paper is to investigate the formative dimensions of organizational resilience – namely dynamic capabilities (DCs) and social capital – displayed by retail entrepreneurs in the face of natural disasters (i.e. the 2012 Emilia earthquake). The paper evaluates social capital and the various types of DCs that support small entrepreneurs’ resilience during three temporal units of analysis: before the earthquake, during the emergency period, and during the recovery process.

Design/methodology/approach – The study was performed by applying a qualitative approach based on two focus groups and a double set of semi-structured interviews administered to a sample of eight small retail entrepreneurs hit by the 2012 Emilia earthquake. Content analysis was then applied.

Findings – The findings show that DCs and social capital are instrumental to enhancing organizational resilience; moreover the contribution of each category of DCs (reconfiguration, leveraging, sensing and interpreting, learning and knowledge integration) and social capital to entrepreneurs’ resilience changes according to the temporal phase of the natural disaster under analysis.

Research limitations/implications – This study will provide small retailer entrepreneurs and public authorities with useful insights on how DCs and social capital can practically support recovery paths at different times in the occurrence of a natural disaster.

Originality/value – This study contributes to the scientific debate on organizational resilience in disaster management, studying it through the lens of DCs and social capital, and analyzing the role of different types of DCs in developing entrepreneurs’ resilience during the various periods of a natural disaster. Moreover, it contributes by applying the concepts of resilience and DCs to a poorly investigated entrepreneurial context such as the retail one.

Keywords Social capital, Entrepreneurs, Dynamic capabilities, Organizational resilience

Paper type Research paper

Introduction

Natural disasters pose unpredictable and significant threats to the incumbency and continuity of enterprises, thus directly affecting their ability to offer products and services to customers.

As such, for entrepreneurs to ensure the continuity, sustainability, and future success of their businesses, they must be resilient. However, resilience is a latent characteristic, since it is not possible to evaluate the “resilience potential” of an entrepreneurial firm until it displays a resilient response to a disruptive event (Linnenluecke, 2017). In the firm context, this paper adopts the organizational resilience view, which is a “firm’s ability to effectively absorb, develop situation-specific responses to, and ultimately engage in transformative activities to capitalize on disruptive surprises that potentially threaten organization survival” (Lengnick-Hall et al., 2011, p. 244). However, whether and how organizations can demonstrate resilience in response to environmental shocks and their capacities that lead to that resilience are still debated in the business and management resilience literature (Linnenluecke, 2017). As empirical research suggests, responding to adverse events depends on the entrepreneurs’ ability to reorganize (Comfort, 1994) or mobilize (Yang and Hsieh, 2013) resources and capabilities. Further, Lengnick-Hall and Beck (2005) argue that resilience capacity is a multidimensional construct based on three organizational components: cognitive (i.e. sense-making, ideological identity), behavioral (i.e. varied
action inventory, functional habits), and contextual capabilities (i.e. social capital, network of external resources). Adding to this debate, the authors propose adopting dynamic capabilities (DCs) (Teece et al., 1997), defined as the capacities of an organization to purposefully create, extend, or modify its resource base (Helfat and Peteraf, 2009), similar to a lens through which the cognitive and behavioral capabilities that trigger organizational resilience from an entrepreneurial perspective are studied. Besides, to further contribute to the study of organizational resilience as a formative construct, this study draws on the social capital theory (Dubini and Aldrich, 1991) to also include contextual capabilities (Lengnick-Hall and Beck, 2005). This enables us to conceptualize the capability to cultivate relationships based on trust and reciprocation, with individuals that can help when needed, particularly when a natural disaster happens.

In other words, this paper investigates retail entrepreneurs’ ability to react to natural disasters (i.e. an earthquake) and display resilience, by analyzing its formative elements (i.e. different types of DCs, as well as social capital) over three temporal units of analysis: before the earthquake, during it, and during the recovery process.

Our research questions are as follows:

**RQ1.** Since resilience is a latent characteristic that manifests as an ongoing process only when a crisis or disaster occur, how can resilience be built in advance?

**RQ2.** How can DCs and social capital help retail entrepreneurs respond to an adverse event?

**RQ3.** During which phases of a natural disaster are DCs activated to trigger resilience, and when do the effects of social capital manifest?

To answer the above questions, this study leverages the natural experiment of the 2012 Emilia earthquake to explore the formative dimensions of resilience, to understand whether some of the key aspects of DCs and social capital can be used to describe the determinants of resilience during natural disasters. To this effect, the narratives of several small retail entrepreneurs affected by the earthquake that hit the Emilia region in northern Italy in 2012 were collected and analyzed. In this study, the entrepreneur is defined as the founder, owner, and manager of a small firm (Zhao et al., 2010), choosing retail as the analysis context due to the important role it plays in a community hit by a natural disaster: retailers can contribute to building community resilience and reaching a “new normality” by providing a community with crucial goods and services (Liu et al., 2012; Peterson et al., 2010). However, the DC perspective has rarely been applied to the retail sector, with some exceptions (Conant et al., 1993; Marcus and Anderson, 2006; McGee and Peterson, 2000). Moreover, the analysis of how small retail entrepreneurs mobilize their capabilities in the face of adverse events is limited in the literature, and the resilience concept has been rarely applied or studied for the retail sector (Dolega and Celińska-Janowicz, 2015).

This paper thus contributes to the extant literature by using the DC perspective, specifically the studies rooted in evolutionary theory (Teece, 2012; Zollo and Winter, 2002), as a perspective for studying organizational resilience to natural disasters. In doing so, this study’s first aim is to contribute to the main debate on resilience (Kantur and İşeri-Say, 2012, 2015; Lengnick-Hall and Beck, 2003; Linnenluecke, 2017) by exploring the extent to which the application of a DC perspective can help understand retail entrepreneurs’ capabilities to survive crises and display resilience. Second, the authors determine that different categories of DCs, along with social capital, show varying degrees of importance in generating resilience, depending on the particular disaster phase that retailers are facing. This study contributes to the literature by providing evidence that the organizational impact of an adverse event should be evaluated according to time phases. As a result, different sets of capabilities are needed to respond to the changing environment before, during, and after the adverse event (Yang and Hsieh, 2013). Finally, our paper contributes to understanding the theoretical and
entrepreneurial implications of applying organizational resilience from a DC perspective to the retail sector.

The paper proceeds as follows. The next section presents the theoretical background, first focusing on the concept of resilience and its evolution and contextualizing it for natural disasters affecting the retail sector. Second, the DC perspective and social capital are presented and discussed in relation to resilience. The third section describes the proposed methodology: a qualitative approach based on content analysis. The fourth section outlines and discusses the results. The study’s implications, limitations, and potential avenues for future research are also presented.

Literature review

Resilience

Resilience is considered a key feature in the responses individuals, systems, or organizations exhibit to adverse and unexpected events. The term has been widely used in various disciplines due to its multifaceted nature, leading to context-dependency and fragmentation in resilience research (Linnenluecke, 2017). Holling (1973) introduced the use of the concept in ecological domain, defining it as the ability of a system to return to equilibrium after a disturbance. Additionally, resilience conceptualization was also used in socio-ecological systems (Walker et al., 2004), individual and organizational psychology (Powley, 2009), crisis and disaster management (Paton and Johnston, 2001), high-reliability organizations (Weick, 1993; Weick and Sutcliffe, 2001), supply chain management (Sheffi, 2005), and strategic management (Kantur and İşeri-Say, 2012).

Its multidisciplinary development allowed the concept of resilience to evolve: not only do resilient systems display an adaptive capacity, but they may also reach new equilibriums in new environments and learn in response to disruptions (Carpenter et al., 2001). Consequently, such systems do not play a passive role in the operating environment but rather continuously develop and make use of new knowledge, resulting in better preparedness for turbulences. However, at the organizational level, resilience cannot be simply seen as the ability to recover from unexpected and adverse situations as to return to the previous state (Mallak, 1998; Sutcliffe and Vogus, 2003). In line with Weick (1993), Lengnick-Hall and Beck (2003) conceptualized resilience as the ability to turn challenges into opportunities, and thereby improve performance. In their view, organizational resilience is a process rather than a static state, and goes beyond mere re-establishment to the sensing and seizing of new opportunities (Coutu, 2002; Lengnick-Hall and Beck, 2003, 2005).

This processual view of resilience is consistent with the studies (Kuratko and Audretsch, 2009; Zahra, 2003) that consider entrepreneurship itself as a processual phenomenon not strictly limited to the creation of new businesses. Entrepreneurship also encompasses the process of strategic renewal for existing businesses, which refers to the changes that “alter pre-existing relationships within the organization or between the organization and its external environment and in most cases will involve some sort of innovation” (Sharma and Chrisman, 1999, p. 19). The renewal or even rebirth of an existing organization after a natural disaster have several common characteristics with the strategic renewal process, as described by the corporate (e.g. Zahra, 2003) and strategic entrepreneurship literature (e.g. Kuratko and Audretsch, 2009). However, there is another point to consider regarding resilience studies as follows. Drawing on social capital theory, the disaster management literature states the importance of relational ties in facing the emergency and the subsequent recovery process. Therefore, organizational resilience also depends on the capability to cultivate relationships based on trust and reciprocation within networks of individuals (parents, friends, commercial networks) that can help when need arises.
Moreover, even if some authors suggest that resilience “implies pre-event readiness for a disruptive event [and] post-event response for appropriate and timely recovery” (Kantur and Işeri-Say, 2012, p. 764), the majority of literature does not provide empirical support for the impact of timing in conceptualizing resilience.

Resilience to natural disasters in the retail sector
Natural disasters can have a direct effect on an organization’s ability to supply finished goods onto a market and provide critical services to its customers (Bhamra et al., 2011). In this context, some studies have underlined the importance of the retail sector and consumption habits in achieving a “new normality” after a natural disaster (Kennett-Hensel et al., 2012; Liu et al., 2012). In the case of an earthquake, consumers show a strong desire to reengage with their normal day-to-day pre-earthquake shopping behaviors as an expression of personal control over event unpredictability (Ballantine et al., 2014). In other words, individuals seek to revert to their previous patterns of consumption to regain a sense of normality and safety. Unsurprisingly, studies have found that, one year after a natural disaster, the retail sector is usually the first to complete the recovery process (Pearson et al., 2011). However, empirical research has also revealed that retail is the industry most affected by natural disasters as, immediately after a disruptive event, there is a high ratio of closure among retail shops (Wasileski et al., 2011) and a general decrease in the number of small retailers (Chang, 2010). The sector’s vulnerability is linked to both the direct damage to properties, buildings, and goods, and to the indirect damage due to the negative effects of consumption adjustments. For example, during the post-disaster recovery process of Hurricane Katrina, customers switching to less expensive goods and an increase in “do-it-yourself” solutions were registered (Liu and Black, 2011). Moreover, a high-impact event possibly reduces the pace of recovery and the ability of a wide number of retailers to regain a good position on the market immediately after the natural disaster. This is also due to the population reconfiguration after a natural disaster: individuals tend to leave the damaged territories and return after a longer period.

Resilience has been researched in urban retail studies as a dynamic and evolutionary process, rather than a property or characteristic (Martin, 2012; Wrigley and Dolega, 2011). The resilience of urban retail is considered important not only at the urban system level, but also in terms of the contribution of individual shops to the change. For instance, Erkip et al. (2014, p. 113) state that “the viability and vitality of an urban core can only be sustained through the resilience of different retailers.” For retail resilience, variety seems of particular importance in terms of retail offer, ownership, size, etc. Although spontaneous reorganization may be suggested in ecological systems, the extent to which self-organizing behavior can induce anticipatory and/or reactive reorganization in social or economic systems has been questioned (Martin, 2012). This fact suggests the potential effectiveness of controlled reorganization with the support of institutional actors (Dolega and Celińska-Janowicz, 2015).

DCs and resilience
In their seminal work, Teece et al. (1997) considered DC a special type of capability that integrates, builds, and reconfigures internal and external resources to address rapidly changing environments. Although the linkages with the resource-based view are obvious, the aim of the DC theory is primarily shifting the literature debate beyond the static nature of the resource-based approach. Its focus is rather on the mechanisms through which organizations accumulate capabilities and the respective contingent factors that may affect the process. Unsurprisingly, a consistent body of literature grounded the DC concept on an evolutionary economics perspective, the foundations of which lay in learning mechanisms such as repeated practice, past mistakes, and experience (Eisenhardt
and Martin, 2000), and on organizational processes shaped by firms’ assets and their past evolutionary paths (Barreto, 2010).

However, the organizational ability to face changes and even shocking external events like crises and natural disasters cannot be completely related to the functioning of a DC mechanism. For example, Zollo and Winter (2002) argue that firms, even when DCs are absent or scarce, may make changes as a result of ad hoc decisions or even luck. Although the DCs perspective cannot encompass all managerial responses to change, it currently provides the most valuable framework for new value creation and continuation for enterprises in turbulent and dynamic environments (Lin and Wu, 2014; Teece et al., 1997). In such environments, DCs enable the reconfiguration of existing resources and capabilities, so that firms sustain a competitive advantage (Teece, 2007). Helfat et al. (2009) argue that DCs can assist firms in achieving the necessary evolutionary fitness (i.e. a firm’s sustainability capacity when unexpected environmental changes occur).

By building on these studies, the authors argue that an entrepreneur’s ability to effectively sense, seize, and face natural disasters can be fruitfully associated with DCs. Consequently, this study contributes to the debate on how and which DCs can trigger organizational resilience. Gittell et al. (2006, p. 303) define resilience as “a dynamic capacity of organizational adaptability that grows and develops over time” in a form sufficiently flexible to positively face unexpected events. Consistent with the dynamic perspective, Lengnick-Hall et al. (2011) argue that organizational resilience is embedded in a set of individual-level abilities and “organizational routines and processes by which a firm conceptually orients itself, acts decisively to move forward, and establishes a setting of diversity and adjustable integration that enables it to overcome the potentially debilitating consequences of a disruptive shock” (p. 244). The adoption of a DC perspective corresponds with the processual perspective of organizational resilience, which looks beyond re-establishment as to include the employment of capabilities adaptable to changing circumstances and the ability to recognize new opportunities and move forward (Coutu, 2002; Lengnick-Hall and Beck, 2003, 2005).

The authors believe that the adoption of a DC approach offers a viable perspective to studying how resilience is achieved by small entrepreneurial firms. Despite the growing interest in DCs and their relationship with entrepreneurial processes, relatively few studies have explicitly identified which types of firm are more likely to gain advantages from DCs and why (Barreto, 2010). Attention has been hitherto directed toward large firms and multinational enterprises (Teece, 2007), with relatively limited consideration given to small entrepreneurial ventures (Zahra et al., 2006). However, Teece (2012) argues that the smaller an organization, the more its capabilities depend on one or few particular individuals (Ambrosini and Bowman, 2009). In firms where the main decision-maker is also the entrepreneur, a single individual actively develops and applies DCs (Woldesenbet et al., 2012) to sense and seize opportunities, face threats, and evaluate and prescribe changes in the configuration of resources (Teece, 2012).

The perspective of DCs seems to be also consistent with some of the specificities of the entrepreneurial process. Entrepreneurial capabilities are defined as “the ability to identify opportunities and develop the resource base needed to pursue the opportunities” (Arthurs and Busenitz, 2006, p. 199), and according to Woldesenbet et al. (2012), they are intrinsically dynamic since they interact in complex and subtle ways with the environment. As such, DCs and entrepreneurial capabilities coexist in supporting environmental changes so that “it would be difficult to delineate where an entrepreneurial capability ends and a dynamic capability begins” (Woldesenbet et al., 2012, p. 495).

Further, this study argues that the DC theoretical setting grounded in an evolutionary perspective, offers adequate latitude to explain entrepreneurial firms’ capacity to respond, adapt, and transform resources in cases of business disruption and, along with social
capital, explain their recovery process after a natural disaster. Consequently, the authors believe that a DC perspective could also be adequately adopted to study the activation of resilience for small firms.

Social capital and resilience

While DCs offer a viable theoretical background to analyzing the cognitive and behavioral capabilities that constitute organizational resilience, social capital theory helps conceptualize the contextual dimensions of resilience. Social capital has been generally defined as “networks and resources available to people through their connections to others” (Aldrich, 2012, p. 2), which connections offer information, enable the emergence of trustworthiness, and provide access to resources. In the entrepreneurship literature, social capital is considered as a contextual supplement and key asset for small firms (Lee and Jones, 2015; Stam et al., 2014): through social capital, entrepreneurs can identify opportunities and mobilize resources (Adler and Kwon, 2002).

Moreover, social capital is based on three underlying dimensions: structural, cognitive, and relational (Nahapiet and Ghoshal, 1998). Structural social capital concerns the nature of the entrepreneur’s social network based on size, density, and diversity. Cognitive social capital relies on actors having different perceptions on their networks. Finally, relational social capital consists of actual relationships or bonds among actors who rely on one another. Therefore, it is concerned with trust, reciprocity, mutual obligations, and expectations. Recently, a symbolic dimension emerged as well, where networks and social relationships accompany stories, narratives, values, or meanings (Nordstrom and Steier, 2015).

In this study, social capital is considered as an entrepreneur’s personal network, based on the family members, friends, and business contacts with whom the entrepreneur is directly connected and the indirect relations between them (Dubini and Aldrich, 1991). Within the academic literature, social capital has been considered as a critical part of resilience to natural disasters both at the community (Aldrich, 2012; Aldrich and Meyer, 2015) and organizational level (Lengnick-Hall et al., 2011). Entrepreneurs with cohesive and flexible relational patterns before the crisis (Kahn et al., 2013) proved well situated to draw on informal insurance after a disaster. In this respect, Powley (2009) argues that relational redundancy plays an important role in favoring the activation of relational networks in case of disruptive events. Therefore, immediate and low-cost access to extensive resource networks can be considered contextual resilience capability (Lengnick-Hall et al., 2011). This is a key element in creating contextual conditions that support the development of resilience to adverse events and positively affect the recovery timing and process, especially for small independent entrepreneurs (Asgary et al., 2012). In fact, resources and capabilities secured by socially related networks extend the range of feasible actions, thus stimulating innovation and resilience (Lengnick-Hall and Beck, 2003, 2005).

Methodology

Natural experiment: the 2012 Emilia earthquake

The 2012 Emilia earthquake acts as a natural experiment through which the resilience of local small retail entrepreneurs is tested. The earthquake hit in two waves: the first was on May 20, 2012 (magnitude $M_L$ 5.9) and the second on May 29, 2012 ($M_L$ 5.8). The earthquake led to 28 deaths and 300 wounded, 45,000 individuals left homeless, with an estimate of the damages at EUR13 billion (Regione Emilia Romagna, 2017a). The crater area included 33 municipalities, with a total of 550,000 residents and 66,000 local productive units, and minor damages were also registered in about 50 other neighboring municipalities.
Almost EUR4 billion have been granted for the reconstruction of private homes and businesses, in addition to the over EUR800 million spent in the first emergency phase and more than EUR1 billion liquidated by private insurances (Regione Emilia Romagna, 2017a).

The earthquake affected one of the country’s most productive and densely industrialized areas, which accounts for 2 percent of the Italian gross domestic product, with a high concentration of agricultural, industrial, and handicraft production units. In the six months after the earthquake, more than 40,000 workers had resorted to wage guarantee funds and compensation schemes due to the closure of their firms. The most affected sectors were manufacturing (especially biomedical and textile) and retail (Regione Emilia Romagna, 2012). In the five years after the earthquake, the restoration of damaged buildings and equipment, and temporary relocation of assets and inventory reached EUR1,748 million (Regione Emilia Romagna, 2017a). As far as commercial business activities were concerned, 6,893 units were involved in the reconstruction process, of which 2,137 belong to the retail sector. Currently, about half of the reconstruction sites have been completed (Regione Emilia Romagna, 2017b).

The consequences of the earthquake were amplified by various factors. First, the territory was not classified as having a high seismic potential. As a result, the earthquake was unexpected. Second, this was the first time in Italy an earthquake hit a highly industrialized area. Finally, the disaster happened after a period of economic crisis that had already greatly weakened the local economic system, especially the smallest retailers.

Data collection and sampling
Data were collected based on a qualitative approach in three steps as follows. First, a focus group (FG) with a first group of small retail entrepreneurs affected by the Emilia earthquake in 2012 was conducted. During this exploratory phase, the authors identified the recovery paths and explored the formative dimensions of resilience by the retailers. Second, since a single firm’s resilience to a natural disaster is related to the resilience exhibited by the entire community, a second FG was organized, involving the representatives of local authorities and retail trade associations to gain insights into the nature and intensity of the support provided at the system level. Finally, as the most important phase of the data collection process, the authors conducted personal, semi-structured interviews with a sample of eight small retail entrepreneurs not included in the first FG. The authors conducted two interviews with each entrepreneur at different times to better evaluate the key aspects of DCs and social capital as formative factors for resilience. The interviews were conducted at the small retailers’ current places of operation in the municipalities most affected by the earthquake. This also gave us the opportunity to directly observe each small retailer in his/her actual place of business. All FGs and narratives were recorded and fully transcribed. The FGs lasted approximately two and half hours, and the personal interviews around one and half hours each. Both data collection methods focused on three temporal units of analysis the respondents were asked to reflect upon. As previously mentioned, the first unit was “before the earthquake:” the respondents were asked to describe their retail activity and circumstances of their businesses before May 2012, self-reported effects of the economic crisis on the pre-earthquake business, and competencies they used. The second was the “emergency phase:” the respondents were asked to describe the actions put into practice immediately following the earthquake, list the competencies used, and the support they received from external actors and their own network. The third and last analysis unit is “post-earthquake phase and the recovery process:” the respondents were asked to describe the recovery plan they intended to adopt to place themselves favorably in the marketplace again and the competencies they employed. Along this temporal sequence of analysis, the utilized protocol allowed asking questions developed a priori, as well as approach specific relevant themes that emerged during each interview.
For both the FGs and personal interviews, this study adopted a reasoned sample of small retail entrepreneurs, selected with the support of three local retail entrepreneurial trade associations. The criteria for the selection were as follows: entrepreneurs whose shops were located within the earthquake crater; entrepreneurs acknowledged for their business vision, who could critically identify and analyze the current state and future trends of the local retail sector; and entrepreneurs whose businesses survived the natural disaster and regained satisfying levels of performance during the post-earthquake phase.

The retail entrepreneurial trade associations provided a list of small retail entrepreneurs still active after the earthquake and helped the research group shortlist small retail entrepreneurs who satisfy all selection criteria above. The final purpose of the sample selection process was to ensure sampling validity, as an important part of the empirical validity of the proposed content analysis process (Krippendorff, 2013, p. 336). The characteristics of the sample for the personal interviews are reported in Table I.

As previously mentioned, the collection of personal interviews took place during two phases. The first set of interviews was conducted in 2014, two years after the earthquake, a phase that the interviewees defined as still plagued by emergency characteristics. The purpose was observing and examining the patterns of recovery they started to put into practice and actions they took to achieve resilience. The follow-up interviews were conducted in 2017, during the phase of post-earthquake and recovery process. The purposes were twofold: first, to evaluate their patterns of recovery five years after the earthquake, and thus the capability to overcome the emergency phase, and second to gain a deeper understanding of the antecedents for the entrepreneurs’ actions and the role of DCs and social capital as formative factors of resilience.

Data analysis

This study adopted content analysis, defined as “a research technique for making replicable and valid inferences from texts” (Krippendorff, 2013, p. 24), using a three-step procedure to ensure the reliability of the process, consistency and replicability of data, and minimization of subjectivity and coding distortions. First, the authors used an iterative process to create the labels for analyzing entrepreneurs’ actions and patterns of recovery. The process started with the analysis of academic literature regarding the scales used to measure DCs and social capital. A codebook was thus created with the chosen labels and tested it with the entrepreneurs’ FG to validate categories. The authors repeated the application of the rules in the codebook until they became mutually exclusive and exhaustive, and met the study’s purposes. The coding protocol provided item definitions derived from the literature, and gave examples of application to minimize the coders’ subjectivity and personal interpretation of the text. This guaranteed the semantic validity of the procedure and guided the coders so that “the recording units, when placed in one category, may differ in all kinds of way, but not regarding the meanings that are relevant to the analysis” (Krippendorff, 2013, p. 343).

Second, the retailing firms were defined as sampling units and the narrative from each retailer was analyzed independently. Our context unit is the sentence, defined as “units of textual matter that set the limits on the information” (Krippendorff, 2013, p. 101). To perform reliability testing, three researchers were involved in the coding phase (Krippendorff, 2013, p. 268). The research group applied the codebook to each interview separately, and interpreted the texts and measured the intensity of use of each item counting how many times it emerged as an explanation of the entrepreneur’s actions for resilience. The coding procedure was performed on the same text for repeated trials. Under the test-retest, the results of interpretation and coding remained stable, ensuring procedural stability (Krippendorff, 2013, p. 270). Moreover, in order to ensure replicability, the three coders worked individually in applying the same coding protocol on the same texts, and inter-observer differences were...
<table>
<thead>
<tr>
<th>Code</th>
<th>Shop characteristics</th>
<th>Product specialization</th>
<th>Firm foundation</th>
<th>Damages</th>
<th>Interviewee characteristics</th>
</tr>
</thead>
</table>
| 11   | Town center, 2 partners and 1 employee, rented shop | Ice cream shop | 2006 | Type: building declared unfit for use  
Amount: not declared | Sex: Male  
Education: high school diploma  
Previous experience: employee in a firm  
Number of years running that shop at the time of earthquake: 6 |
| 12   | Town center, 1 entrepreneur, owned shop | Photo shop | 1949 | Type: building declared unfit for use  
Amount: 304,000 euros | Sex: Male  
Education: junior high school diploma  
Previous experience: electrician  
Number of years running that shop at the time of earthquake: 32 |
| 13   | Town center, 2 partners, owned shop | Apparel store | 1983 | Type: building declared unfit for use  
Amount: 20,000 euros | Sex: Female  
Education: high school diploma  
Previous experience: employee in a firm  
Number of years running that shop at the time of earthquake: 18 |
| 14   | Town center, 1 entrepreneur, rented shop | Gift shop | 1991 | Type: building declared unfit for use  
Amount: 60,000 euros | Sex: Female  
Education: high school diploma  
Previous experience: employee in a photo shop  
Number of years running that shop at the time of earthquake: 21 |
| 15   | Town center, 1 entrepreneur and 1 employee, two owned shops | Herbalist’s shops | 1984 | Type: building declared unfit for use, one shop permanently closed  
Amount: 10,000 euros | Sex: Female  
Education: degree  
Prev. experience: none  
Number of years running that shop at the time of earthquake: 28 |
| 16   | Near the town center, 2 partners and 1 employee, rented shop | Drugstore | 2001 | Type: building declared unfit for use  
Amount: 430,000 euros | Sex: Male  
Education: junior high school diploma  
Previous experience: employee in other shops  
Number of years running that shop at the time of earthquake: 11 |
| 17   | Town center, 1 entrepreneur, owned shop | Optician shop | 1953 | Type: habitable  
Amount: 5,000 euros | Sex: Male  
Education: high school diploma  
Previous experience: none  
Number of years running that shop at the time of earthquake: 30 |
| 18   | Town center, 2 partners, rented shop | Apparel store | 1990 | Type: habitable but only after renovation  
Amount: not declared | Sex: Male  
Education: junior high school diploma  
Previous experience: employee in an apparel store  
Number of years running that shop at the time of earthquake: 22 |
discussed until reaching result consistency (Krippendorff, 2013, p. 271) and a unique attribution of each phrase that was rich in relevant meaning to one category.

Third, the results of each interview were merged and interpreted as a whole, according to the temporal sequence and the theory under analysis. In doing so, for the structural validity of the procedure, the authors ensured the incidence of the relationships between the categorized items within the aim of the content analysis and extant literature (Krippendorff, 2013, p. 346).

In this study, organizational resilience is considered as a formative construct (Bollen and Lennox, 1991), which is actually latent and determined as a combination of five indicators (shown in Table II) that are not interchangeable and concur to form the construct of organizational resilience. Three of them – reconfiguration, leveraging, and sensing and interpreting – directly stem from the DC analysis of Makkonen et al. (2014). The fourth label, “learning and knowledge integration,” resulted from the merging of the other three DC categories presented by Makkonen et al. (2014): learning, knowledge creation, and knowledge integration. Since these categories relate to knowledge creation from internal or external sources, the authors merged them to avoid overlapping, repetitions, or misinterpretations. The fifth label that concurs to form organizational resilience is the “social capital.” The entrepreneurs involved in the FG confirmed the importance of this last dimension in facing the earthquake, and emphasized the support they had received from consumers, suppliers, and even other retailers. Similar conclusions resulted from the FG with local authorities and retail trade associations: participants acknowledged their crucial role in facilitating entrepreneurs’ networking in facing the earthquake, and confirmed the higher resilience potential of the retail entrepreneurs strongly involved in the local community and trade associations.

By labeling and coding the semi-structured interviews, the authors identified the actions taken by the retail entrepreneurs to overcome the effects of shocking external events, namely the global financial crisis from the period before the earthquake and the earthquake itself during the emergency phase and recovery process. Since “a dynamic capability consists of patterned and somewhat practiced activity” (Helfat et al., 2009, p. 5), the follow-up

<table>
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<tr>
<th>Label</th>
<th>Definition</th>
<th>Action coding: Examples</th>
</tr>
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<tbody>
<tr>
<td>Reconfiguration</td>
<td>The capability to continuously and purposefully reconfigure the existing resource base in order to exploit its existing knowledge</td>
<td>“I think that, every 10 years, you have to modify your activity. You have to introduce new things and renovate your shop”</td>
</tr>
<tr>
<td>Leveraging</td>
<td>The capability to utilize and deploy existing resources in new situations</td>
<td>“After a week, I started to sell clothes at home, in my garden: it looked like a shop in Provence!”</td>
</tr>
<tr>
<td>Sensing and interpreting</td>
<td>The capability to interpret the environment and to position oneself favorably in the changed/changing market</td>
<td>“It was a critical moment for the people hit by the earthquake, so I had to change my products: I decided to list products of good quality but at a lower price”</td>
</tr>
<tr>
<td>Learning and knowledge integration</td>
<td>The capability to adopt, create and acquire new capabilities through the learning process of experimentation and repetition or through external sources</td>
<td>“I usually visit a number of fairs in order to find new products different from those of competitors”</td>
</tr>
<tr>
<td>Social capital</td>
<td>The capability to exploit long-term and faithful relationships related to the entrepreneur’s personal network</td>
<td>“My supplier was great. He really made the difference: he gave me all the merchandise on consignment, and this saved my shop”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“My customers were great, coming to my home in order to buy something and helping me in that way”</td>
</tr>
</tbody>
</table>

Table II. Labels and coding rules applied in the analysis
interviews also responded to the specific methodological issue of tracing the determinants that would classify retailers’ actions as related to DCs. Specifically, the patterned elements that distinguish DCs from ad hoc problem solving or innate talent were verified (Helfat et al., 2009). To this end, every time a DC was assumed to explain a given action in terms of resilience, the authors traced the action’s origin by investigating whether its function had been repeated over time. Consequently, it was traced when the item had been first applied and reconstructed the pattern behind its development (Helfat et al., 2009). Table III summarizes the antecedents of resilience from the first personal interviews, and the explanatory role of DCs and social capital according to the follow-up interviews. The authors conservatively considered as resilience antecedents only those actions both related to a pattern of experience and already used in the past by the entrepreneur.

Findings
The findings show that the relative importance of the different DC categories and social capital changes according to the temporal phase under analysis; the contribution of each factor to resilience is evaluated differently according to the characteristics of the pre-earthquake, emergency, and post-earthquake phases. Table IV shows the intensity of using DCs and social capital in the different phases, as subjectively reconstructed by each retail entrepreneur.

Some common patterns and similarities arise from the importance given to some of the determinants of resilience along each phase, as shown in Figure 1. For example, in the pre-earthquake phase, the sensing and interpreting DC or the learning and knowledge integration DCs were mainly applied, while during the emergency phase, the leveraging DC and/or social capital gained more importance toward achieving resilience. In the post-earthquake phase, the reconfiguration DC was moderately cited, while sensing and interpreting became the most important DC.

All interviewees described the pre-earthquake phase as a period of economic crisis, in which they had to pay increased attention to market changes to maintain a sustainable position in the market. The capability of sensing and interpreting the changing environment was then the most frequently applied:

The retail activity started to diminish: the competition of malls; birth of digital photography, which took away my work as people do not print pictures anymore; decrease in weddings (I2).

Before the earthquake, the retail activity was already suffering because the crisis had already begun. In my city, there was a successful historical open-air market on Sunday morning, but in recent years, it started to decline (I7).

Moreover, some retailers foresaw that their historical city center, as the nucleus of all commercial activities, was experiencing a deep commercial crisis and tried to integrate new knowledge using external resources to overcome these difficulties. Therefore, learning and knowledge integration DCs were heavily applied and took different forms:

That year, I participated in three exhibitions and one course organized by a supplier. I want to be continuously up-to-date (I1).

In September 2011, I was in Paris to search for the most up-to-date products (I5).

The reconfiguration DC had a lower importance in the pre-earthquake phase, while leveraging and social capital were not applied. The latter did not seem to appear as key formative factors of resilience during economic crisis in the pre-earthquake phase.

All small retailers described the moments immediately after the earthquake as extremely confused and chaotic: there were no formal protocols or previous experience that would lead the action. Everybody did their best and had to improvise to accomplish the pressing needs of the earliest moments after the disaster. The factors that sustained most rapid and resilient
<table>
<thead>
<tr>
<th>Resilience formative factors</th>
<th>Phases</th>
<th>Generative factors</th>
<th>Notes: Dummy variables: 0 = absence; 1 = presence</th>
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Table III. Resilience formative factors in each phase and generative factors

The resilient retail entrepreneur
### Table IV.
Resilience formative factors for the eight small retail entrepreneurs investigated

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<tr>
<th>Resilience formative factors</th>
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<th>Post-earthquake</th>
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**Figure 1.**
Resilience formative factors: importance by phases
reactions were the solid net of relationships built over the years of experience and/or the leveraging capability to exploit own resources, according to the intensity of the damage reported and the personal and professional history of each small retailer.

During the emergency phase, the capability to exploit social capital with different stakeholders showed the highest intensity for four entrepreneurs. Long-term and trustworthy relationships with the suppliers helped firms by providing discounts on goods, temporarily interrupting invoice payments, providing support in the rebuilding of the damaged shop or in the setting up of temporary store solutions:

I have a supplier who allowed me to stop making payments. Moreover, he helped me when I had to move (I1).

The aid was mostly from my main supplier, who gave me means and men to clean and empty the store (I6).

Relationships with loyal consumers also played an important role in stimulating the continuity of the selling activity, and many small retailers reported strong solidarity:

We felt strong solidarity from established customers, who call us asking, “How are you doing? I'm going to come to buy something from you!” That solidarity gave us the strength to go on (I3).

My strength was in my customers, people who, when meeting me while cycling, asked about my re-opening (I5).

Finally, the support and cohesion among the retailers themselves was of great importance, as was the support of retail entrepreneurs’ trade associations and experts in obtaining information on the formal procedures, granting access to public subsidies, and grasping all available opportunities to sustain the recovery:

The help of other shopkeepers in my chain: there was a great support, given in friendship (I6).

Trade associations gave us indications about opportunities for subsidies (I5).

An expert showed us how a consortium could be established, and the possibilities and constraints related to it (I3).

During the emergency phase, the leveraging capability also showed a high use intensity, as did the capability to sense and interpret the sudden changes in consumer needs. By definition, the leveraging capability allows the deployment and utilization of existing resources in new situations, even in disruptive ones such as those occurring due to a natural disaster. Retailers adopted different and, in some cases, creative solutions to continue operating their businesses and provide the population first-aid retailing services. Since almost all shops were declared unfit for use, the majority was forced to adopt temporary business locations. Some used their homes as shops, while others chose different locations, such as a gazebo or a small wooden house. Some transformed themselves into peddlers in open-air markets outside the affected area:

On 24 June, we re-opened at my house. In the morning, I prepared ice cream, and in the afternoon, I left my ice-cream activity to go to the “Renza” [an ice cream shop, around 30 km away] from 4 pm to midnight (I1).

We brought into the biggest room in our house some of the summer clothes, and we started to sell from there, simply putting a billboard in front of the house. We worked in this way until mid-August 2012 (I8).

The learning and knowledge integration DCs and the reconfiguration DCs were not intensively used in the emergency phase as resilience capacity determinants.

Beyond the initial reaction, over time, the interviewees began to engage in more organized forms of disaster response, trying to sustain individual basic needs for
consumption as means to regain a sense of normality. In the post-earthquake phase, the sensing and interpreting capabilities became more important, registering a high usage rate. According to the small retail entrepreneurs, these capabilities assumed a fundamental role in the assessment of strategic alternatives and in the generation of new solutions on the market after the earthquake:

You are like in a new town, in a new world, where you have begun a new activity; you cannot use your experience and the fact that they know you. From my personal experience, I sell goods that I was not selling before, and before, I was selling things that I do not sell now (I6).

During this phase, the reconfiguration DCs gained a higher importance and showed a moderate intensity of use in organizing to provide services of sale for the modified necessities. Retailers declared they had to modify their suppliers' portfolio to adapt the product offering to the new context and consumer needs:

We tried to get a larger slice of younger customers, following what we already changed in the past, with some minor variations (I8).

The social capital factor diminished its importance, its function becoming limited to the support from loyal consumers, as reported by the majority of interviewees:

Even if I made the choice to stay in the town centre, I'm well known by customers: if they need an herbalist they know where I am (I5).

Those who came into the town centre were our loyal customers; just for them, we tried to remain there for more than one year (I8).

Additionally, the leveraging capabilities diminished their importance during the post-earthquake phase. The necessity of knowledge integration remained stable, but at a lower level, and many of the small retailers declared that the experience from the emergency phase was absorbed and became part of their resources and expertise:

My experience with Renza was insightful: she was making chocolate ice creams, and all of the customers were asking what that ice cream was. Therefore, in my new shop, I made an ice cream with hazelnut, white chocolate and wafers. People really went mad for it! (I1).

The findings also show that some actions rely on factors that cannot be strictly related to DCs and social capital conceptualization. These include the innate talent that allows some individuals to turn challenges into opportunities, as well as contingency-based problem-solving abilities. When analyzing the small entrepreneurs' narratives using a grounded perspective, the authors identified a group of actions linked to the ability to recognize and seize new opportunities arising from the unfavorable conditions of the post-earthquake phase to turn challenges into opportunities (Weick, 1993). Therefore, based on Lengnick-Hall and Beck (2003) and Weick (1993), these were named “disruptive creation abilities.” Completely absent in the pre-earthquake phase, they were observed for the first time during the emergency phase. However, it was during the post-earthquake phase the disruptive creation abilities showed their highest intensity. During that time, they assumed a relevant role as to complement the resilient responses of the interviewees facing disruption due to the natural disaster. New opportunities arose from the disruptive contingencies of the natural disaster, and the affected small retail entrepreneurs were able to recognize and seize them using their resilience capacity. Sometimes, municipalities and trade associations offered opportunities in terms of subsidies, new commercial spaces, or collaborative projects, as part of a broader community resilience project. Otherwise, in most observed cases, the earthquake resulted in enhanced or new business opportunities:

In Cavezzo, a new retail idea was born approximately 10–12 days after the earthquake. In an area outside the town centre, we made a container mall there, a camp for damaged retailers.
This structure is relatively costless and is anti-earthquake. It has also the advantage that people can quickly enter it, and that’s attractive for consumers. I believe that this was a really winning idea (FG7).

These events could also create opportunities! I think to myself: without the earthquake, I would never have the courage to make another shop, after establishing the old one six years ago. Now I’m glad I did it (I1).

Discussion

The concept of resilience has been mostly regarded in disaster management studies as an important factor ensuring continuity, sustainability, and future success in the case of disruptive events (Kantur and İşeri-Say, 2015). Hitherto, limited attention has been devoted to analyzing the formative dimensions of resilience. Particularly, few studies investigated what set of DCs an entrepreneur should exhibit when he/she realizes that an uncommon situation (e.g. a natural disaster) requires a resilient response (Linnenluecke, 2017).

Based on the experiences of a sample of small retail entrepreneurs, before, during, and after the 2012 earthquake in the Emilia area, different types of DCs, namely reconfiguration, leveraging, sensing and interpreting, learning and knowledge integration, along with their respective relational ties due to social capital, played different roles and exhibited various levels of intensity during the three analyzed phases. The only exception was the sensing and interpreting DCs, which maintained a constant relevance over time. The narratives regarding the formative factors applied in the pre-earthquake phase were the benchmark in analyzing the resilient reaction of each small retailer afterwards. Immediately after the earthquake, DCs mostly untapped during the pre-shock phase emerged as the fundamental pillars of resilience, particularly the leveraging capability. Leveraging capabilities guaranteed a quicker reaction to an unexpected external shock. When forced to respond immediately, firms tended to use the existing resources to extract all the potential value from them (Gittell et al., 2006). The relevance of leveraging capabilities is thus consistent with the approaches to resilience (Gittell et al., 2006; Lengnick-Hall and Beck, 2005; Meyer, 1982; Sutcliffe and Vogus, 2003) that suggest the key role of slack resources in absorbing organizational shocks due to disruptive events. Actually, the leveraging of existing resources and competencies has been considered the most common resilient reaction to a disruptive event (Paton and Johnston, 2001), especially in the emergency phase, when the speed of external changes is high and volatility extreme. The findings also suggest that, during the emergency phase, a key role is played by the rapid exploitation of social capital as to have an immediate and costless access to extra resources from relatives and friends, business networks (suppliers, customers, competitors), and public agencies. The importance of social capital in facing a disruptive event is particularly important for small independent retailers (Asgary et al., 2012), which do not directly possess a set of resources and competencies large enough to make internal leveraging always possible.

During the post-earthquake phase, retailers had to place themselves favorably in the “new normality,” where customers’ needs and preferences were likely to change. In an arduous search for a new stability, the most important DC became the sensing and interpreting capability. Its effectiveness is less dependent on a short-term reaction, and mainly related to the ability to analyze the evolution of an environmental context and make strategic decisions for the middle term (6-12 months) to find the right positioning in the new post-earthquake situation. Moreover, this ability is developed over time. The entrepreneurs that showed a greater sensing and interpreting capability in the pre-earthquake phase tended to apply this capability more intensely in the post-earthquake phase as well. This is consistent with the existence of routines to noticing exceptions and unexpected events in the environment, which increases a firm’s ability to understand its current situation and develop a broader variety of potential actions that reflect their understanding (Lengnick-Hall and Beck, 2005). The ability
of a firm to capture signals from the new environment and interpret changes before competitors leads to more rapid and effective paths of strategic repositioning (in terms of products, price ranges, customer targets, etc.). This can be decisive in making the recovery process successful and achieving resilience, thus influencing the organization strategic positioning and even its survival (Linnenluecke, 2017).

Our findings confirm the multifaceted nature of resilience. Although different types of DCs, along with social capital, enhance a firm’s ability to respond to changes, their role in a recovery strategy varies significantly according to firm characteristics and existing base of resources, and the nature of the environmental change. Our study demonstrates that the relational ties related to social capital are more decisive for firms reporting less damage and a lower application of DCs during the pre-earthquake phase, whereas for firms with greater resources and experience in the running of the business leveraging, the DC pertaining to reconfiguration are likely to have a greater importance. Furthermore, some DCs are more suitable to shorter reaction times (leveraging DCs, social capital), while other capabilities (sensing and interpreting capabilities, reconfiguration capabilities) sustain longer-term actions. Additionally, their effectiveness in facing the external changes that require different reaction times differs accordingly. Since the recovery strategies from natural disasters are based on actions that embrace different time spans (Yang and Hsieh, 2013), the overall resilience of a firm should be assessed by considering the variety of DCs in relation to its ability to effectively react over the short term and over longer periods.

The authors also expanded the classification model of Makkonen et al. (2014) by exploring the role of another factor contributing to entrepreneurial resilience: social capital. The prominent role of social capital means it can provide small retail entrepreneurs with a promptly available set of new resources to complement their endowment of resources and competencies. This suggests a close relationship between the ability of a retail firm to react to a natural shock and the economic and social strength of its relationships with its family, friends, customers, and suppliers.

While offering new evidence on the relationships between DCs dimensions, social capital, and entrepreneurs’ resilience to natural disasters, our results also suggest the existence of a more complex set of factors in creating organizational resilience. Additionally, disruptive creation capabilities emerged as a driver of change for resilient retail entrepreneurs. While social capital has its origin in the entrepreneur’s existing network, disruptive creation resides in forward-oriented capabilities, which enable a firm to capitalize on environmental changes in ways that create new options and capabilities (Lengnick-Hall and Beck, 2005). Weick (1993) stated that improvisation and acting as “bricoleurs” help organizations survive in chaotic conditions and restore order after a critical event. Some of our respondents were able to move forward and proactively create change with whatever resources they have at hand, including those offered by public authorities and other collective actors. Moving from organizational inertia and creatively recombining their limited set of resources, they made decisions that led them to radically and successfully modifying their market positioning and business models. Therefore, resilience seems to consist of more than adaptation: it is about being solution-oriented, proactive in seizing new opportunities, and turning deeply adverse conditions into innovative opportunities for business renewal and change (Kantur and İşeri-Say, 2015).

Our study also offers insights into the disaster recovery management perspective. The authors demonstrated that, during the emergency phase, resilience was based on the blocks of DCs that were significantly different from those used in the subsequent stages of the recovery path. Therefore, when analyzing a firm’s crisis response after a natural disaster, it is crucial to consider that the resources and competencies most suitable for facing the changes can differ according to the different stages of the critical event (Yang and Hsieh, 2013). Consequently, the scholars interested in acquiring a deeper
understanding of resilience should focus their attention on the phasing of the natural disasters to clearly identify the shifting sets of external conditions that have different impacts on a firm’s recovery strategies.

Conclusions
This study provides the practitioners with useful insights on how recovery paths are practically used at different times in the case of an earthquake, thus indicating what response capabilities are useful for similar natural disasters. The resilient retailer should be aware of the enormous importance of being in a favorable social capital condition, with a portfolio of long-lasting and strong relationships with both suppliers and customers. In fact, the ability to build solid relational capital not only gives retailers an advantage in managing operations during ordinary times, but could also ensure the immediate availability of support in reacting to uncommon and unplanned shocking events. Moreover, this could complement the leveraging of internal resources, which proved the most relevant group of DCs during the emergency phase. The results of this study suggest that retailers who enter the crisis phase with a consolidated set of sensing and interpreting capabilities have better chances to deploy these capabilities during the crucial post-disaster phase, when firms need to fine-tune or even turn around their strategies to tackle competitive discontinuities or react to unexpected customer changes. Therefore, retailers endowed with marked environmental sensing capabilities are also more likely to show greater resilience when facing natural disasters. These findings confirm that natural disasters can create entrepreneurial opportunities, as they can result in “a kind of impetus for transforming entrepreneurial intentions into behaviours” (Monllor and Murphy, 2017, p. 619), acting as sources of innovative ideas and new ventures.

The findings of this study could also serve as a start for the institutions designed to support retailers affected by calamities, allowing for better-designed crisis response strategies and tactics. Similar to entrepreneurial self-efficacy, resilience can also be developed at the wider institutional level (Coutu, 2002). As such, local governments and retail entrepreneur trade associations should consider implementing training programs that include reporting and mentoring from resilient retail entrepreneurs to spread good practices within the sector and acknowledge small retailers’ disaster preparedness and contingency planning. Overall, the findings suggest that educational programs and training efforts for enhancing retail entrepreneurs’ market sensing capabilities and extending the opportunities associated with resource stretching practices could adequately support the development of organizational resilience. Moreover, local authorities should learn how to support and facilitate emerging coordination nodes (Boin and McConnell, 2007) between citizens and/or retail entrepreneurs and their suppliers. For example, to provide continuity to firms’ operations in the direst period immediately after a disaster, retail entrepreneur trade associations can offer instantly available relational platforms for channeling essential resources during the emergency phase (e.g. productive capacity, warehouses) from and in favor of their members.

This study, by focusing on small retail entrepreneurs’ crisis responses after a natural disaster, fills a gap in the crisis management literature regarding the retail sector, as limited attention has hitherto been given to the process of capability deployment to support a crisis response strategy in the retail sector. Moreover, this study makes an important contribution by examining the role of DCs deployed by small independent retailers in the aftermath of a natural disaster, and the role of different types of DCs in sustaining resilience during the different phases of a disaster. This study also suggests the existence of other antecedents of resilience: social capital and disruptive creation, meaning all aspects of resilience are considered. Not only does resilience lead retail entrepreneurs to recovery, but also to renewing their business activities both internally and externally, turning unfavorable conditions into new opportunities of managing successful businesses (Kantur and İşeri-Say, 2015).
As this research effort is an empirical exploration, it is not without limitations. First, it uses a sample limited to small retailers, which does not allow us to compare them with the big retail chains. Second, this study focuses strictly on small retailers’ competencies and capabilities, while ignoring the bundles of resources (tangible and intangible) that could be activated and integrated to better respond to an adverse event. Third, methodologically, our content analysis protocol is designed ex novo, which limits inference to the analyzed case. However, the structural validity and reliability of the research process is ensured. As such, the application of the same protocol in another context (i.e. a different natural disaster) may lead to higher accuracy and enhance the predictive validity of the current analysis. Additionally, some areas for future research can be as follows. First, it is worthwhile examining not only DCs, but also the role of resources in the design of resilient responses to natural disasters. Moreover, a single case study would allow collecting the viewpoints of the stakeholders involved in the ongoing resilient pattern of recovery of small retail entrepreneurs. Second, future analyses should compare the DC endowment of small retailers with those of large retail chains. This could lead scholars to identify patterns in the recovery of both small and large retailers, as, in fact, small businesses are more vulnerable to environmental forces than medium- and large-sized firms (Schindehutte and Morris, 2001). Finally, the authors intend to conduct quantitative analysis using a structured questionnaire on a large sample of small retailers affected by the Emilia earthquake to further develop this research endeavor and generalize the results.

References


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How entrepreneurial resilience generates resilient SMEs

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Abstract

Purpose – The purpose of this paper is to investigate how entrepreneurial behaviors support small and medium-sized enterprise (SME) resilience, refine the concept of entrepreneurial resilience, and identify how SME resilience might be promoted.

Design/methodology/approach – Qualitative data were collected in the UK via 11 focus groups which provided a sub-sample of 19 SME participants.

Findings – Because of their experience operating in uncertain environments, their direct experience of adversity, and the informal organizational settings they inhabit, entrepreneurs are often highly resilient and possess capabilities that enable SMEs to be resilient. Entrepreneurial resilience provides a basis for SME resilience that differs significantly from best practices as understood in larger firms.

Research limitations/implications – Exploratory qualitative research on a small sample (n = 19) limits the generalizability of this work. Further research could quantitatively test the paper’s findings and/or examine the link between entrepreneurial resilience and the resilience of larger firms.

Practical implications – Rather than encouraging formal planning and redundancy, policy and practice designed to promote the resilience of SMEs should pay greater attention to building capacities to cope with uncertainty, generating and leveraging personal relationships, and activating the ability to experiment and think creatively in response to crises.

Originality/value – This paper draws on organizational psychology research to refine understanding of entrepreneurial resilience and to empirically examine and inductively theorize the multi-level relationships between entrepreneurial resilience and SME resilience.

Keywords – SME, Entrepreneurship, Organizational resilience, Entrepreneurial resilience

Paper type – Research paper

Introduction

It is widely believed that small and medium-sized enterprises (SMEs) lack resilience and that they are disproportionately impacted by a wide range of external shocks (Battisti and Deakins, 2012; Ingirige et al., 2008). This characteristic is worrying, given the social and economic significance of SMEs (Ates and Bititci, 2011; de Vries and Shields, 2006; Lewis and Cassells, 2010) and the recent scale and diversity of extreme events. Severe weather, terrorist attacks, ransomware, global pandemics, and geo-political instability create significant challenges to SME structure, success, and survival (Linnenluecke et al., 2012; May and Koski, 2013). It is thought that the ability of SMEs to exhibit resilience – the capacity to “rebound or bounce back from adversity, conflict, and failure” (Luthans, 2002, p. 702) – is reduced because of a lack of planning for crises (Paton et al., 2010), limited internal resources, narrow customer base, and low bargaining power (Smallbone et al., 2012).

However, recent empirical evidence has demonstrated significant resilience among SMEs in the context of extreme events. For example, in the aftermath of the 2010 Christchurch earthquakes, Battisti and Deakins (2012) noted that the absence of written crisis management plans did not undermine resilience in SMEs. They explained this possibly counter-intuitive finding by observing that, “[…] they [SMEs] are more flexible and better
able to respond quickly to changing environments. This adaptive capability is crucial to improve resilience to crises such as natural disaster” (Battisti and Deakins, 2012, p. 6). Graham (2007, p. 304) also found evidence suggesting that after the 9/11 terrorist attack in the USA, a “common response among [small] business owners to the terrorist attack was a renewed commitment to Lower Manhattan as a place to do business.” This suggests that some SMEs can demonstrate “underlying resilience” (Smallbone et al., 2012, p. 1).

The contrast between the received wisdom and recent empirical evidence in relation to SME resilience suggests the need for greater study of how SMEs achieve resilience and of the role of entrepreneurs in these processes. Entrepreneurial resilience is defined as, “as a form of emotional and cognitive ability that is useful for the entrepreneur, particularly when bouncing back after failures connected to their entrepreneurial initiative” (Bernard and Barbosa, 2016, p. 89). Kantur and Işeri-Say (2012, p. 772) argue that there is an important, but unspecified, relationship between “entrepreneurial activities and resilience strategies,” suggesting that additional research examining links between entrepreneurial behavior and SME resilience is likely to be fruitful. Entrepreneurs exhibit many of the characteristics commonly associated with resilience, as they tend to excel in the face of ambiguity and change (Ayala and Manzano, 2014), identify previously unexploited opportunities (Hitt et al., 2001), view “dire circumstances” as opportunity (Bullough and Renko, 2013, p. 345; Bullough et al., 2014), persist during times of adversity (Holland and Shepherd, 2013), and proactively take initiative (Krueger and Brazeal, 1994). However, despite the theoretical and practical significance of this topic, it has received remarkably little attention in the literature (Bullough et al., 2014; Powell and Baker, 2011). A focus on theoretically and empirically exploring the role of entrepreneurial resilience in promoting SME resilience is likely to be productive because the behaviors and personality attributes of entrepreneurs have been found to have a strong direct impact on SME structure, strategy, and performance (Miller, 1983; Miller and Toulouse, 1986). Additionally, a focus on entrepreneurial resilience and SME resilience is important because much of the research on resilience focuses on large firms and their characteristics (e.g. Sullivan-Taylor and Wilson, 2009).

Conceptually, there is a need to generate a more nuanced understanding of entrepreneurial resilience and to more concretely theorize the processes that promote SME resilience. In part, this is necessary because the literature on entrepreneurial resilience has developed largely in isolation from wider resilience research and is disconnected from theories concerning multi-level resilience (e.g. see, Lengnick-Hall et al., 2011; van der Vegt et al., 2015). Advancing understanding of entrepreneurial resilience requires a multi-level appreciation of how entrepreneurial behaviors shape SME resilience. Empirically, “there is little research on how crises affect entrepreneurship” (Doern, 2016, p. 278); more generally, there is limited evidence of how SMEs plan for and respond to extreme events (Herbane, 2010). Thus, there is a need for more empirical research that examines how entrepreneurial resilience generates SME resilience.

Considering these gaps, the authors present a qualitative study of how entrepreneurial behaviors contribute to the creation of resilient SMEs. This study makes three key contributions to the entrepreneurship and resilience literatures. First, a novel multi-level approach is developed from the extant literature to examine the relationship between the individual level of analysis, (i.e. resilient entrepreneurs and individual resilience) and the organizational level of analysis, (i.e. resilient SMEs). This approach affords insight into precisely how and when entrepreneurial resilience might support the development of SME resilience while also informing the study’s boundary conditions. The paper also integrates two previously disparate bodies of literature, thereby providing a more fully developed conceptual basis for entrepreneurial resilience in practice. Second, this study empirically examines the nature and impact of entrepreneurial resilience. The findings indicate that participants from the SMEs in the sample attribute their ability to cope with uncertainty and crisis to characteristics commonly associated with individual resilience, such as self-efficacy.
social connections, and well-being. These findings emphasize an untheorized connection between entrepreneurial and individual resilience. Finally, an inductive multi-level model of the relationship between entrepreneurial resilience, SME resilience processes, and mechanisms and SME resilience outcomes is developed. The model directly contributes to the theorization of entrepreneurial resilience, as it identifies that entrepreneurial behaviors and/or individual resilience characteristics can provide an alternative basis for SMEs to cope, or thrive, under conditions of extreme uncertainty and crisis.

This paper begins by distinguishing between entrepreneurs, SME managers, and entrepreneurial behaviors. Next, the micro-foundations of organizational resilience are unpacked, and prior research from the entrepreneurship and entrepreneurial resilience literatures is synthesized with wider research on resilient individuals and organizations. Subsequently, the methods applied are introduced and the empirical findings discussed. An inductive model of the impact of entrepreneurial resilience on the organizational resilience of SMEs is presented in the discussion, after which the implications of the research and the conclusions of the study are drawn.

**Entrepreneurs, entrepreneurial behaviors, and SME resilience**

This study explores how organizational resilience is developed in the context of SMEs and investigates the role of entrepreneurs and entrepreneurship in shaping the resilience of small and medium-sized organizations. This is an inherently multi-level approach to understanding SME resilience because it focuses on the role of individual actors (entrepreneurial behaviors) in shaping a key organization-level outcome (resilience).

Before discussing and problematizing existing conceptions of organizational resilience and its antecedents, it is important to recognize the contested and often conflated (Chiles et al., 2007; Roininen and Ylinenpää, 2009) relationships between small business owner-managers and entrepreneurs, and entrepreneurship. Research has emphasized that not all SME managers are entrepreneurs and that not all entrepreneurship occurs in the setting of SMEs (Messeghem, 2003). Entrepreneurship is characterized and defined by behaviors, chiefly proactivity in identifying and exploiting opportunity, innovativeness, and novelty in introducing new processes and products/services and risk-taking (Covin and Slevin, 1989). In contrast, SMEs are defined and characterized by their size and their relative lack of formal structural artifacts when compared to larger organizations. At the conceptual level, SMEs are recognized as distinctive organizational settings, owner-managers as formal roles/positions, and entrepreneurs and entrepreneurship as reflecting distinctive attitudes, behaviors, and activities. This paper follows much of the extant literature in characterizing the leadership/management behaviors observed in the context of SMEs as constituting “entrepreneurial behavior” or “entrepreneurship,” not least because SMEs have structural characteristics that most call for entrepreneurial behaviors (Mintzberg, 1989).

**Micro-foundations – organizational resilience**

Resilience at the organizational level of analysis is defined as an organizational “ability to quickly recognize and seize opportunities, change direction, and avoid collisions” (McCann, 2004, p. 47), or as “moving quickly, decisively, and effectively in anticipating, initiating and taking advantage of change” (Jamrog et al., 2006, p. 5). Linnenluecke and Griffiths (2010) argue that organizational resilience is best defined as “the amount of disturbance the organization can absorb before it loses its structure and function” (p. 19). Organizational resilience in the context of extreme events has been theorized as a form of positive organizing in anticipation of extreme events (e.g. natural disasters, pandemic disease, and terrorism) “that can contain, repair and transcend vulnerability in organizational systems” (Waldman et al., 2011, p. 941). Herbane et al. (2004, p. 437) conceptualize organizational resilience as an on-going capability “that underpins organizational development in
complex environments.” Weick and Sutcliffe (2007) suggest that resourcefulness, technical, organizational, and rapidity capabilities are necessary for resilience in high reliability organizations.

Identifying the influences on organizational resilience requires more than a capability check-list approach because resilience “arises from a complex interplay of many factors at different levels of analysis” (van der Vegt et al., 2015, p. 977). Research on large organizations has emphasized that relative resource abundance is a significant driver of resilience and that resources of various kinds (financial resources, stock, inventory, raw materials, etc.) can contribute significantly to resilience if significant shocks or challenges are experienced. Financial resources can act to provide a buffer in the face of crisis, and the scope to redeploy financial assets to various uses makes them especially important sources of resilience (Gittell et al., 2006). Similarly, physical resources such as stocks of final goods and inputs can be especially important in providing resilience in the face of disruptions to supply chains or production downtime (Sheffi, 2007).

Prior research has also emphasized that planning and highly developed formal operating processes and practices can endow organizations with considerable resilience. Studies have highlighted the value of formal planning processes that proactively identify emergent risks and points of vulnerability, establish contingency plans to assign roles and responsibilities if crises emerge – which are supported by broad participation and engagement of staff throughout the organization in exercises, simulations, and scenarios modeling potential shocks – practice responses, and validate plans (Pal et al., 2014). Research has highlighted that the discipline and processes associated with fully mapping the activities, roles, and systems associated with techniques such as total quality management, continuous process improvement, and lean operating processes endows organizations with the robustness and knowledge to effectively address unanticipated crises (Christopher and Rutherford, 2004; Tang, 2006). Another operational strategy associated with resilience in the context of large companies is the strategic investment in redundancy in the form of multi-skilling, unused capacity in physical resources, and multiple sourcing in supply relationships (Sheffi, 2007; Sheffi and Rice, 2005).

Thus, planning, resource abundance, highly developed formal processes and systems, and redundancy are keys to developing resilience in the context of large organizations. However, given that these are, almost by definition, areas in which SMEs are likely to face significant deficiencies, it is important to consider an alternative set of resilience micro-foundations in the context of SMEs.

**Micro-foundations – entrepreneurship and individual resilience**

Having outlined the concept of organizational resilience, and problematized the applicability of much of the research concerned with developing it to the context of SMEs, this paper now turns to exploring alternative mechanisms for building resilience in SMEs. In developing a novel foundation for SME resilience, entrepreneurial characteristics are considered before exploring contributions from positive organizational psychology that highlight the influences on resilience at the individual level. Subsequently, the paper examines how entrepreneurial behaviors and individual resilience drivers might support SME resilience.

Successful entrepreneurs possess well-established survival instincts, as they have a positive attitude toward risk (Hedner et al., 2011), remain positive in the face of setbacks (Baron and Markman, 2000), and sometimes view failure as an opportunity to renew or re-start (Hayward et al., 2010). Additionally, entrepreneurs tend to exhibit a “need for achievement, generalized self-efficacy, innovativeness, stress tolerance, need for autonomy, and proactive personality” (Rauch and Frese, 2007, p. 353). Key characteristics of entrepreneurs are summarized in Table I. High levels of motivation, or “passion for the business,” appear to be key to how entrepreneurs overcome adversity (Fraccastoro, 2011, p. 5).
The relative strength of SMEs may therefore be in the entrepreneurial mindset of their owners, which in turn enables SMEs to be flexible, adaptive, and innovative (Vossen, 1998). If, as de Vries and Shields (2006) argue, resilience is a key trait of the entrepreneur, it is important to understand both the basis for an entrepreneur’s resilience and how resilient entrepreneurs might contribute to SME resilience.

Entrepreneurial resilience is often presented as synonymous with individual resilience (see, Adnan et al., 2016; Bullough and Renko, 2013). In the entrepreneurship literature, resilience tends to be presented as either “a personality trait of the entrepreneur” (Bernard and Barbosa, 2016, p. 89) or as an outcome of entrepreneurial life experiences (de Vries and Shields, 2006). Sources of resilience at the level of the entrepreneur have been identified as “experience, focusing on the positive, containing negative emotions, asking for help, actively mobilizing resources, persistence and determination” (Doern, 2016, p. 295). The resilience of individuals has been extensively conceptualized and examined outside of the context of entrepreneurship. Positive organizational psychology (Bardoel et al., 2014) conceptualizes resilience as an individual attribute or characteristic and focuses on how employees develop and sustain resilience in the face of daily workplace stressors (King et al., 2015; Zagelmeyer and Gollan, 2012). More specifically, individual resilience is associated with a range of positive individual attitudes and behaviors (Fredrickson, 2004; Sommer et al., 2016). Through a combination of “resilience resources” and “protective factors,” resilience helps individuals to outperform their peers even when under stress and to maintain well-being in high-pressure environments (Avey et al., 2011). Individual resilience has been demonstrated to increase work performance and job satisfaction, improve psychological well-being, and raise organizational commitment and citizenship (Avey et al., 2011). Table II compares key sources of individual and organizational resilience as identified in the extant literature.

Consideration of individual resilience alone offers only a partial explanation of entrepreneurial resilience because entrepreneurial resilience crosses over individual resilience and organizational resilience without falling neatly into either category. Additionally, it is important to note that individual resilience and entrepreneurial resilience are adjacent and potentially complementary concepts rather than synonyms. Ayala and Manzano (2014) found that individual resilience both helped to predict entrepreneurial success and was critical in determining organizational outcomes for SMEs. A key component of entrepreneurial resilience is therefore the impact the entrepreneurs’ resilience, or non-resilience, has on the SME and wider economic system (Huggins and Thompson, 2015).

Notwithstanding the emergence of the literature on entrepreneurial resilience, the received wisdom in entrepreneurial research is that SMEs lack resilience and that this is a significant social and economic issue. SMEs are even more important at times of economic recession (Stokes, 2002), as they provide opportunity for renewal and re-employment. In fact, it can be argued that potential entrepreneurs are a key source of long-term societal resilience (Krueger and Brazeal, 1994). Storey (1994, p. 78) argues that “the fundamental

<table>
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<th>Characteristics</th>
<th>Key literature</th>
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<tr>
<td>Stress tolerance</td>
<td>Rauch and Frese (2007)</td>
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<tr>
<td>Comfort with failure</td>
<td>Baron and Markman (2000), Hayward et al. (2010)</td>
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<td>Comfort with risk and uncertainty</td>
<td>Hedner et al. (2011)</td>
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<td>Generalized self-efficacy</td>
<td>Rauch and Frese (2007)</td>
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<td>Innovativeness/creativity</td>
<td>Rauch and Frese (2007)</td>
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<td>Need for autonomy</td>
<td>Rauch and Frese (2007)</td>
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<td>Opportunity-seeking</td>
<td>Bullough and Renko (2013), Bullough et al. (2014), Hitt et al. (2001)</td>
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Table I.
Entrepreneurial characteristics

Characteristics

Stress tolerance
Comfort with failure
Comfort with risk and uncertainty
Generalized self-efficacy
Innovativeness/creativity
“Making do”
Need for autonomy
Opportunity-seeking
Proactivity
characteristic, other than size per se, which distinguishes small firms from large is their higher probability of ceasing to trade. The ability to adapt to an uncertain, and potentially hostile, future increases the requirement for resilience (Ates and Bititci, 2011). However, entrepreneurs and SMEs can be disproportionately impacted by extreme events as they have fewer resources “to plan, respond and recover” (Ingirige et al., 2008, p. 583). Resource constraints experienced by SMEs include lack of access to finance (Storey, 1994), lack of technological resources, and constraints related to human resources (Vossen, 1998). Resource scarcity is therefore a key issue for SMEs seeking to be resilient, as “best practice is [typically] identified in resource rich large enterprise contexts” (Herbane, 2010, p. 44). However, Baker and Nelson (2005, p. 359) argue that entrepreneurs are not constrained by resources to the degree that the resource-orientated school would suggest and that entrepreneurs are particularly well suited to “making do with what is at hand” (i.e. Strauss’s concept of bricolage). They define “entrepreneurial bricolage” as “[…] the pursuit of opportunity through close regard to the resources at hand,” and they emphasize that entrepreneurs can be “alert to resources” in the same way that they are alert to opportunity (Baker and Nelson, 2005, p. 359).

Resource-oriented research tends to suggest that SMEs lack resilience; conversely, behavioral research emphasizes some advantages SMEs possess that promote resilience. This is perhaps reflected in the fact that SMEs “are less concerned with formal systems” (Storey, 1994, p. 74), display an informality to the working environment (Storey and Sykes, 1996), and demonstrate a higher tolerance for ambiguity and adaptation (de Vries and Shields, 2006, p. 41). SMEs have relative advantages (Vossen, 1998), such as “flexibility” and “adaptive capacity” (Battisti and Deakins, 2012). These established SME characteristics may shorten chains of decision making or speed up response times should a crisis unfold. The extent to which SMEs are exposed to crisis might also explain how a positive attitude to

<table>
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<th>Sources</th>
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<td>Organizational resilience</td>
<td>Financial resources, Gittell et al. (2006), Sheffi (2007), Weick and Sutcliffe (2007)</td>
</tr>
<tr>
<td>Resources</td>
<td>Physical resources, Sheffi (2007), Sheffi and Rice (2005)</td>
</tr>
<tr>
<td>Slack</td>
<td>Redundancy, Multi-skilling, Unused physical capacity, Multiple sourcing strategies, Weick and Sutcliffe (2007)</td>
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<tr>
<td>Expertise</td>
<td>Task specialization, Weick and Sutcliffe (2007)</td>
</tr>
<tr>
<td>Individual resilience</td>
<td>Locus of control and self-determination, Binrose and Hearne (2012)</td>
</tr>
<tr>
<td>“Protective factors”</td>
<td>Self-esteem and subjective well-being, Binrose and Hearne (2012)</td>
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<tr>
<td>Capacity for learning</td>
<td>Youssef and Luthans (2007)</td>
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Table II. Comparison of individual and organizational resilience
crisis is developed, as entrepreneurs inherently cope with sustained high levels of stress and external uncertainty in their environment (Storey, 1994; Sullivan-Taylor and Branicki, 2011). SME actors, including entrepreneurs, must often “invent solutions in order to survive” (Zabara et al., 2006, p. 932). Paradoxically, although direct and disproportionate experience of crisis might contribute to the low SME survival rate, it might also enhance “flexibility and responsiveness” (Stokes, 2002, p. 18) and produce comfort with uncertainty (Storey, 1994). Gunasekaran et al. (2011) suggest that SMEs should play to their strengths.

The wider literature has also examined the role of individual behavior in promoting organizational resilience. A direct link has been identified between the individual resilience of leaders and employees and organizational resilience (Lengnick-Hall et al., 2011; van der Vegte et al., 2015). It is also found that leaders play an important role in building the resilience of employees (Sommer et al., 2016). The impact of individual resilience on organizational resilience is often attributed to the importance of social connections (van der Vegte et al., 2015), social capital (Lengnick-Hall et al., 2011), and relational reserves (Gittell et al., 2006; Powley, 2009; Weick, 1993). SMEs may also be able to access further sources of resilience, such as a strong sense of organizational purpose (Lengnick-Hall et al., 2011), decentralized or team-based organizational structures (Lengnick-Hall et al., 2011; Weick and Sutcliffe, 2007), and accessing broad resource through extended networks (Lengnick-Hall et al., 2011; van der Vegte et al., 2015). At the same time, other research finds that organizational resilience is not simply the sum of individual capabilities (Alliger et al., 2015). The relationship between individual and organizational resilience is complex (Lengnick-Hall et al., 2011), and even though the possible interdependencies across levels of analysis have been considered, Jaaron and Backhouse (2014) argue that a gap in the literature persists.

**Summary: integrating framework**

Having contrasted the micro-foundations of resilience as understood in large firms and developed an analysis of the possible routes to resilience within SMEs, an integrating framework is proposed in the form of Figure 1, which grounds this empirical enquiry by articulating how entrepreneurial behaviors might contribute to generating resilient SMEs and contrasting this with the traditional view of individual and organizational resilience. The top panel of Figure 1 integrates studies from entrepreneurship and entrepreneurial resilience that characterize the behaviors of successful entrepreneurs with studies from positive organizational psychology that establish the attributes of resilient individuals, typically in contexts other than entrepreneurship (Linnenluecke, 2017; Youssef and Luthans, 2007). While there is some overlap in the attributes and behaviors identified in these two literatures, there is also considerable divergence suggesting that not all entrepreneurial behaviors contribute to resilience and not all resilient behaviors are distinctively entrepreneurial. The bottom panel of Figure 1 considers the traditional sources of organizational resilience established in the literature and the relationship between organizational resilience and SME resilience. By bringing these commonly disparate literatures together in a synthetic conceptual framework, the authors contrast the traditional view of how resilience is generated with a proposed alternative view (i.e. entrepreneurial resilience).

Figure 1 recognizes a key distinction between individual entrepreneurs and the organizational contexts (the SMEs) in which entrepreneurial behaviors contribute to resilience. Building on this distinction, Figure 1 also explores linkages between the resilience of entrepreneurs and that of the SMEs that are the contexts in which they practice their entrepreneurship. Despite some limited research (e.g. Ayala and Manzano, 2014; Huggins and Thompson, 2015) identifying linkages between entrepreneurial resilience and resilience at higher units of analysis (e.g. the SME, the
regional economic system), there remains a limited understanding of both how it is enacted in practice, and the nature of the inter-relationship between levels of analysis. Hence, this paper proposes the following research question:

**RQ1.** How does entrepreneurial resilience generate resilient SMEs?

**Research approach**

As this paper aims to illuminate a nascent and little understood phenomenon, organizational resilience in the context of SMEs, and to theorize regarding the micro-processes at the individual level of analysis that encourage the development of resilient SMES, an exploratory research design that enhances the validity and reliability of findings is used (Creswell and Clark, 2007; Punch and Punch, 1998). To do this, the research focused upon SMEs operating in the UK, a context where SMEs make up approximately 99 percent of all private business (BIS, 2015).

**Sample**

The sample analyzed in this study is a sub-sample of data collected for a larger study of resilience in UK private and public-sector organizations. The full data set comprised 11 focus groups (n = 161), 20 semi-structured interviews, non-participant observation, and documentary analysis. For this paper, the authors created a sub-sample of the wider data set to focus on 19 SME owner managers/senior managers who attended the focus groups. The data were separated when it became apparent that SME participants had a unique perspective compared to larger organizations’ managers. SMEs are often defined as “businesses with zero to 249 employees” (Williams and Cowling, 2009, p. 7). Here, the focus
is on smaller scale SMEs (i.e. with 2-50 employees), because they tend to be entrepreneur
centric and represent a comparatively under-researched category of organization
(Gherhes et al., 2016). The sample is summarized in Table III.

Research design
An exploratory qualitative approach was selected for this study because it is well suited to
producing rich data about the experiences, thoughts, and behaviors of participants
(Short et al., 2010). Focus groups were selected as the key method because they have the
capacity to generate data and insights that would be less accessible without the
social interaction of a group (Morgan, 1997). This approach enabled “respondent
triangulation,” whereby “the inferences drawn from a set of data sources will be checked
by collecting data from others” (Hill and McGowan, 1999, p. 15), thus, mitigating
against the critique that qualitative research in the field of entrepreneurship lacks rigor
(Short et al., 2010).

In the most basic terms, a focus group is “an informal discussion among selected
individuals about specific topics” (Beck et al., 1986, p. 73), and “although there are many
possible variations on the basic method, centrally it involves one or more group discussions,
in which participants focus collectively upon a topic selected by the researcher” (Wilkinson,
1998, p. 182). Each data collection event lasted approximately three hours and included a
brief talk by the session chair (usually a senior representative from industry or government),
an ice-breaking exercise, 1.5-2 hours of core data capture (i.e. the core focus group component) led by the research team using a semi-structured schedule, and concluded with a short de-brief presentation from the research team. This event structure was designed to
attract senior decision makers to attend the focus groups and to improve the conditions for

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<th>Organization</th>
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<tr>
<td>Business consultancy</td>
<td>Managing director/owner</td>
<td>Private</td>
<td>Sole trader</td>
</tr>
<tr>
<td>Consultancy</td>
<td>Middle manager</td>
<td>Private</td>
<td>Sole trader</td>
</tr>
<tr>
<td>Business network</td>
<td>Senior manager</td>
<td>Private</td>
<td>Micro</td>
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<tr>
<td>Business network</td>
<td>Chairman/owner</td>
<td>Private</td>
<td>Micro</td>
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<tr>
<td>Business consultancy</td>
<td>Director</td>
<td>Private</td>
<td>Micro</td>
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<td>Micro</td>
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<tr>
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<td>Micro</td>
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<td>Private</td>
<td>Small-to-medium</td>
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</tr>
<tr>
<td>Small-to-medium</td>
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</table>

Table III. Sample summary
group interaction. Although a semi-structured schedule was used, time was allowed for participants to engage with each other (Morgan, 1997). The full duration of each event was digitally recorded and professionally transcribed. The research team also took and transcribed contemporaneous field notes that captured observations such as inter-group behavior. Additionally, during the focus groups, participants completed a printed workbook that asked open and closed questions about the resilience of their organization. Participants were also encouraged to record additional thoughts.

**Data analysis**

All focus groups were recorded and professionally transcribed, and any additional field notes were typed up. Textual data were then imported into the qualitative software package NVivo for analysis and coding. The analytical approach involved a general inductive strategy (Glaser and Strauss, 1967). A grounded approach was selected to avoid forcing the data into pre-generated categories (Bryant and Charmaz, 2007). However, analysis did not proceed with a complete blank slate as it was informed by the authors’ pre-existing knowledge of the relevant extant literature (see Figure 1 for summary). Data were initially organized by asking simple questions of the complete data set, which in turn enabled the authors to identify core categories that would help to link the actions, events, and responses shared by participants (Glaser and Strauss, 1967). Data were coded by multiple research team members to enable inter-rater reliability and to guard against omitting novel insights. Having established an overarching thematic coding of the data, themes were assessed for external heterogeneity and internal homogeneity (Patton, 2002). External heterogeneity (i.e. clear difference between concepts) was identified through iterative reading of all the themes for conceptual distinctiveness, and internal homogeneity (i.e. coherence of data within each concept) was assessed by reading and re-reading for coherence. To avoid being overwhelmed by inductive codes, where appropriate, data were combined with a suitable theme or sub-theme. By using this procedure, it was possible to “develop a framework of the underlying structure of experiences and processes that are evident in the raw data” (Thomas, 2006, p. 238). The authors then began to theorize from the materials generated. Using a visual mapping strategy (Huberman and Miles, 1994), a model of key behavioral themes was developed to visually illustrate distinct conceptual relationships. This allowed the authors to integrate themes into a model grounded in the original data that is developed and presented in the following sub-sections.

**Findings**

This sub-section reports the study’s findings in two parts. First, data in relation to the fundamental nature of resilience in the context of SMEs are unpacked. This enabled the research to contrast how entrepreneurs conceive of resilience in this context with the wider literature on the micro-foundations of resilience in larger companies. This analysis encourages a more nuanced and informed discussion in relation to what constitutes SME resilience. Second, how entrepreneurial resilience unfolds in practice is examined; in doing so, new evidence on how entrepreneurs’ behaviors shape SME resilience is provided. This analysis subsequently provides an alternative basis for understanding how resilience can be developed and sustained by SMEs.

**Constraints on SME resilience**

The data indicate that the processes and practices of managing resilience are directly influenced by the characteristics of SMEs. For example, it was found that SMEs reported that they are often walking a “knife edge” between success and failure due to limited...
resources and that small, even trivial, events could present significant risk to firm survival. Two different participants reported:

I would classify an extreme event as any event which causes catastrophic or traumatic loss to the business[…] This can take the form of a major non-payment of an invoice through to flooding of our electronic facilities in the workshop.

An extreme event can be a small one […] what happened to us was just a day with no power in the office, which hurt us because ours is a small organization.

Another common theme identified in the data related to SME structure and task management, as participants reported that they had very plural roles and responsibilities that dynamically unfolded in response to events. As a result, SME managers reported being time poor and under significant day-to-day pressures. One respondent characterized this theme as follows:

They’re trying to run a business. The point I’m making is that these small business people are the managing director; they do the drains, they deal with the car parking issues and customers, and then you can’t have a plan. There’s not the sophistication because you’re battling day to day.

At the same time, not all characteristics of SMEs tend to undermine resilience. There is a connection between managers and the success of SMEs that is absent, or at least significantly diluted, in the context of larger businesses. SME managers tend to have “more skin in the game,” and this heightened the salience of resilience because of the personal impacts associated with business failure. As one SME manager put it, “we are the business […] If we lose our house, we’ve lost our business.”

Despite the strong affective and financial ties between SME managers and their firms, participants reported that the costs of resilience were potentially prohibitive for SMEs, or as put bluntly by one participant, “that the cost of being prepared is not worth it.”

Additionally, participants expressed a lack of motivation in preparing for, and expending energy thinking about crisis:

Yeah, I mean let’s be honest about it. I mean certainly if you’re looking at a lot of the SME sector, the reality is it’s, what’s the minimum we can do and get away with it?

Superficially, it might appear that a lack of motivation, investment, and preparation would undermine resilience in SMEs; however, it was clear from participants that this was not the full picture. The reactive approach to crisis described by participants was often equated with an emergent philosophy of managing and strategizing, rather than a lack of resilience. Participants tended to either be critical of the assumption that all SMEs lacked resilience, or to question whether resilience is a salient concept in the context of SMEs:

People don’t understand – if one of my businesses is impacted by a crisis, it might not survive because I was already considering moving on to something new. Maybe the business wasn’t making a profit anyway, or the demand wasn’t there, or I just wanted to start something new or try somewhere else. The individual business matters less in that way than is suggested by these 80% failure rates that are thrown around.

This quote indicates that for some SMEs, resilience must be about more than organizational survival to be a relevant concept.

The nature and impact of entrepreneurial resilience

The last set of themes identified in the evidence concerned how individual entrepreneurs promoted the resilience of their SMEs. Thus, these findings address the linkages between resilience at the individual and organizational levels of analysis. How the behavior and characteristics of entrepreneurs might create an alternative basis for SME resilience is now
considered, and through this the analysis examines the practice of entrepreneurial resilience. As summarized in Table IV, participants reported four key sources of SME resilience. First, participants emphasized the importance of social connections in producing informal support mechanisms. This finding is significant because social connection is often understood to be a type of “resilience resource” that supports individual resilience (see Table II for a literature summary). In the context of the SME sample, resilience was understood to be in part produced by the social embeddedness of the entrepreneur within the business, and by the social support provided by employee and secondary stakeholder relationships:

It’s more like a family, i.e. they support each other. And that’s actually very important, especially in an SME where it’s not just the employee/manager relationship; it’s obviously a very long-term relationship. We have a lot of people who’ve been there 30 years, 25 years. So, it’s a different sort of scenario. There are unofficial support mechanisms.

These relationships tended to both have a personal dimension and exhibit mutual understanding that in turn provided a source of support to SMEs during crisis. Participants also reported a cultural component of SME resilience, as well as the role of trust, involvement, and collaboration among organizational members. In these processes, managers played an active role in promoting resilience by championing an inclusive culture and establishing and enforcing norms of devolved responsibility: “It’s an organizational culture so that everybody knows what their role is within that bouncing back.” Relationship management was therefore seen as critical to achieving SME resilience.

Second, as previously discussed, participants were reticent to emphasize planning and investment as a basis for resilience, instead emphasizing the value of autonomy and a high locus of control:

So, you can then stand back and say well I don’t have to do anything, I don’t have to plan for anything because if it happens I know what I’ve got to do.

They sort of know what they should do most of the time.

<table>
<thead>
<tr>
<th>Themes</th>
<th>Link to the literature</th>
<th>Indicative quotations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee relationships as &quot;unofficial support mechanism&quot;</td>
<td>Individual resilience “resilience resource”</td>
<td>It’s more like family</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Look after staff everything else follows</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I am totally dependent on the people</td>
</tr>
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<td></td>
<td></td>
<td>Every member of your staff is crucial to your business, your organization, that’s one of your assets [...] is your resilience based around the fact?</td>
</tr>
<tr>
<td>Need for autonomy</td>
<td>Individual resilience “protective factors” and entrepreneurial characteristic</td>
<td>If it happens I know what I’ve got to do</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I mean frankly they can have all the regulation, accreditation and structures in the world, but if you haven’t got the resources to do it, you’ll ignore it</td>
</tr>
<tr>
<td>Comfort uncertainty and failure</td>
<td>Entrepreneurial characteristic</td>
<td>They’d make it up on the run</td>
</tr>
<tr>
<td>See silver linings</td>
<td></td>
<td>I just wanted to start something new, or try somewhere else</td>
</tr>
<tr>
<td>Making do and muddling through</td>
<td>“Entrepreneurial bricolage”</td>
<td>Spot the opportunities that exist in the situation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I haven’t got a formal business continuity plan for my own [business] because it doesn’t merit it. So, I will take a practical pragmatic view that I will muddle through as best I can, because I know what to do</td>
</tr>
</tbody>
</table>

Table IV. Entrepreneurial resilience in practice
This finding resonates with both the individual resilience literature, where locus of control is noted as a key “protective factor” by Bimrose and Hearne (2012), and with the literature about characteristics of entrepreneurs (e.g. Rauch and Frese, 2007). This finding is notable as it suggests that the ability to control how resilience is approached in an SME may in turn contribute to SME resilience.

Third, a clear theme in the data related to the role of entrepreneurial characteristics, such as comfort in uncertainty, in producing SME resilience. Participants reported that they were not preoccupied with crisis and that they felt confident that they would not only be able to cope with challenging events but also would look for the “silver lining” within these challenging events. This opportunity-centric view is very typical of entrepreneurial behavior (Hedner et al., 2011), and it is interesting to note this participant’s explanation of the impact this has upon SME resilience:

But it’s also being able to take the opportunity to actually spot the opportunities that exist in the situation, so you could actually go on a step further from going back to normal, because it will be a different normal when you come back anyway. So, it’s actually being able to make the most of the opportunities.

Finally, “muddling through” appeared to enable SMEs to respond to the dynamic, uncertain, unfolding, nature of external threats as circumstances demanded, rather than as plans would have dictated. Thus, the evidence suggests that “entrepreneurial bricolage” (Baker and Nelson, 2005) is used in the production of SME resilience. The following exchange from a focus group exemplifies both the significance participants attached and the preference they exhibited for a “make do strategy”:

Participant: How resilient is it? I’d actually say it’s pretty resilient. Why would I say it’s pretty resilient? Because actually a lot of the people are very capable […] so I think they could respond pretty quickly and pretty effectively.

Facilitator: But do you have evidence? Has it been tested?

Participant: No evidence, it’s not been tested. But if you ask me instinctively I would say it would be more resilient than the degree of preparedness would lead you to expect.

Facilitator: How prepared are the organization’s systems and processes?

Participant: They’re not, but how fast could they evolve? I suspect it’s actually pretty quick because they’d make it up on the run.

Facilitator: You mean they’d muddle through?

Participant: Don’t underestimate muddling through because it might be more effective for a small organization than doing a hell of a lot of planning.

Discussion
This paper has conceptually and empirically examined entrepreneurial resilience to explain how the attributes and behavior of entrepreneurs shape SME resilience. Findings show that the sources of resilience available to SMEs tend to be relational, contextual, attitudinal, and behavioral, rather than structural and resource intensive. The research highlights the critical role that individual entrepreneurs play in promoting these alternative sources of resilience through their attitudes and behaviors. The processes and mechanisms that participants associated with resilient SMEs are most commonly found in the literature associated with individual resilience (i.e. social connections and locus of control), entrepreneurial behavior (autonomy, comfort with uncertainty, opportunistic), and “entrepreneurial bricolage” (“making do” and “muddling through”).

Based on these findings, in Figure 2, a model is developed of the relationships between the resilience attributes of individual entrepreneurs, the organizational processes/routines and mechanisms these provoke and encourage, and SME resilience.
The resilience of SMEs, or their ability to cope with significant external threats and shocks, is featured as the dependent variable in the model. The model suggests that SME resilience is both directly and indirectly influenced by the resilience attributes of individual entrepreneurs. The indirect pathway recognizes the role of entrepreneurs in creating a culture or climate within SMEs that fosters resilience beyond their direct influence.

**Conclusions**

There are several significant implications of this study, with benefits reaching practice and policy. Findings draw into question traditional approaches to understanding and promoting SME resilience. Specifically, this research suggests that one-way communication, which emphasizes the sensitization of SMEs to the need for crisis planning, is unlikely to foster resilient SMEs. Instead, the research suggests several alternative strategies.

The model, presented as Figure 2, indicates that both entrepreneurial and individual resilience characteristics contribute both directly and indirectly to SME resilience. As such, schemes that promote the individual resilience of entrepreneurs or entrepreneurial approaches to small business could have an impact on SME resilience. Additionally, the evidence suggests that policymakers must take a more nuanced perspective on what resilience means in the entrepreneurial context and to consider the implications this has for supporting SMEs. The authors suggest this interpretation because the entrepreneurs in the study did not equate entrepreneurial resilience with the survival of a single business; instead, they observed opportunities for renewal and reinvention as an equally important
component of resilience. These findings suggest three key interventions that government or SME networks could use to promote entrepreneurial resilience:

1. the introduction of guidance and/or regulation that recognizes that SMEs routinely access alternative sources of resilience;

2. local SME events that indirectly build “social connection” (a key individual “resilience resource”); and

3. supporting entrepreneurs in determining how to best approach resilience within their own organization via consultation, rather than guidance/regulation, thus increasing “protective factors” via improved locus of control.

Findings also indicate potential value in several future research directions. First, the resilience of SMEs – revealed in this study – coupled with the existing evidence on the resilience of large firms suggests that there might be a significant problem with resilience in relation to medium-sized firms. Medium-sized companies lack the political, financial, and human resources of large firms and the agility, flexibility, informality, and embeddedness of SMEs, possibly leaving them particularly exposed to external shocks. This is a phenomenon that future research could substantiate and parameterize. Second, this new evidence of unique forms of resilience among SMEs opens avenues of exploration to examine whether similar capabilities might be developed and sustained in large organizations, thereby further promoting their resilience in relation to extreme events. A developing literature concerned with corporate entrepreneurship has begun to examine how large organizations sustain cultures of enquiry, innovativeness, dynamism, autonomy, and creativity (Corbett et al., 2013). Future research could explore the contributions of these cultures to resilience, and examine the interdependencies and complementarities between “orthodox” approaches to developing resilience at the organizational level (e.g. planning, exercises, slack resources), and alternatives that promote organizational resilience by encouraging a devolved capacity for individual resilience.

This study has several limitations that also suggest fruitful avenues for future research. First, the empirical analysis builds on a relatively modest evidence base. Future research could extend this research by evaluating whether conclusions are robust in studies that involve increased sample sizes, as well as variation in context (industry, country). Additional corroborative research would help confirm core conclusions that SMEs are, in general and largely because of the resilience of individual entrepreneurs, more resilient than previous studies have generally assumed. More work also needs to be conducted to clarify and validate the concept of entrepreneurial resilience and to develop instruments for its measurement in large-scale quantitative research. Large-scale research would enable light to be shed on the antecedents and implications of entrepreneurial resilience and additional clarification of the contextual and other contingencies that influence these factors.

The accepted wisdom is that SMEs lack resilience to external shocks and setbacks because they lack the resources (financial, human resources, political) required to be resilient. This study challenges this conventional wisdom through a detailed conceptual and empirical analysis of how entrepreneurs contribute to SME resilience. Drawing on a qualitative examination of UK-based SMEs, the authors employ a novel multi-level approach to examining the nature and impacts of entrepreneurial resilience in practice. The study found that many of the attributes identified in the positive psychology literature as creating individual resilience are exhibited both by entrepreneurs and SMEs. This finding suggests that entrepreneurial behaviors directly and indirectly impact SME resilience, as they shape both SME approaches to resilience and SME resilience outcomes. This paper demonstrates how SMEs can cope, or thrive, under conditions of extreme uncertainty and crisis despite lacking the resources traditionally associated with resilience.


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