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 preparedness or capacity to adjust</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></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 responses or adjustments</td>
<td>Resilience traits facilitating responses to entrepreneurial failure</td>
</tr>
<tr>
<td>(6) Firms and socio-economic systems</td>
<td>Innovation</td>
<td></td>
<td>Entrepreneurial resilience as a process of creative recovery, transformation and learning</td>
</tr>
</tbody>
</table>

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
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 Dahesihsari, 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 broader resilience literature (especially in socio-ecology). For instance, Sabatino (2016, p. 1926) 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 adaptive capacity. Bishop and Shilcof (2017, p. 215) write about “resilient entrepreneurial 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.

Conversational (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 assumes 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.

Conversational (6): Adaptive resilience as a 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

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**Table III. Summary of key findings in existing literature**

<table>
<thead>
<tr>
<th>Conversation</th>
<th>Related concepts</th>
<th>Synthesis of key propositions or findings</th>
</tr>
</thead>
<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</td>
<td>An entrepreneur’s psychological traits and social capital predicts survival or growth of entrepreneurial firms</td>
</tr>
<tr>
<td>(1b)</td>
<td>Mitigation, success factors</td>
<td>Factors such as a firm’s human, economic, and social capital, strategic location, or product range predict the survival or growth of entrepreneurial firms</td>
</tr>
<tr>
<td>(1c)</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>
</tr>
<tr>
<td>(2)</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>(3)</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>(4)</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><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>
</tr>
<tr>
<td><strong>Adaptive resilience</strong></td>
<td></td>
<td></td>
</tr>
<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>
</tr>
</tbody>
</table>
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

**Antecedents of inherent resilience**

(1a) Arter (2016), Ayala and Manzano (2010, 2014), Baron et al. (2016), Bowey and Easton (2007),
    Buang (2012), Danes (2013), De Vries and Shields (2006), Fisher et al. (2016), Hanson (2005),
    Hmieselski et al. (2015), Humphrey (2013), Jaskiewicz et al. (2015), Karnani (2009, 2010),
    Kristensen and Birch-Thomsen (2013), London (2010), Manzano and Ayala (2013), Osiyevskyy
    Yang and Danes (2015)

(1b) Biggs (2011), Carayannis et al. (2017), Chrisman et al. (2011), Danes et al. (2009), Kantabutra

(1c) Al-Harthi (2017), Alonso and Bressan (2015), Biswas and Baptista (2012), Branzei and
    Abdelnour (2010), Cascio and Luthans (2014), Doern (2016), Ghosh and Rajaram (2015),
    Junaid et al. (2014), Knutst (2016), Loh and Daheshsari (2013), Matejowsky (2015),
    Mirhaed et al. (2016), Ngoason and Kimbu (2016), St-Jean and Audet (2012), Torell et al. (2017)

(2) Bernard and Barbosa (2016), Bullough et al. (2014), Bullough and Renko (2013), Hayek (2012),

    McInnis-Bowers et al. (2017), Randall et al. (2014), Reimmoeller and Van Baardwijk (2005),

    Bishop and Shilcof (2017), Cabras and Mount (2016), Canello (2016), Chapin et al. (2006),
    Glaser et al. (2014), Hatch (2013), Henton and Held (2013), Hervas-Oliver and Albors-Garrigos
    (2014), Holm and Østergaard (2015), Huggins et al. (2014), Johannnessen et al. (2014), Karlsen
    and Dale (2014), Kawharu et al. (2017), Knudt (1986), Liang and Goetz (2016), Liu andkivist
    and Boers (2016), Lubell and Zaurour (1990), McIntyre (2009), McNaughton and Gray (2017),
    Miles et al. (2016), Morrison et al. (2017), Mouraviev and Kakabadse (2016),
    Obschonka et al. (2016), Sankaran and Demangeot (2017), Steele (2012), Stoll et al. (2015),
    Suir and Vicente (2014), Sun et al. (2014), Swart et al. (2014), Thompson and Zang (2015),

**Engineering resilience**


**Adaptive resilience**

(6) Baral (2014), Berno (2017), Boettke et al. (2007), Carlsson et al. (2014), Conz et al. (2017),
    Dahles and Susilowati (2015), Dewald and Bowen (2010), Dunn et al. (2017), Galbraith and Stiles
    (2017), Korsgaard et al. (2016), Larsson et al. (2016), Linnenluecke and Mc Knight (2017), Manuel-
    Navarrete and Pelling (2015), Martin et al. (2015), Moon et al. (2014), Moore and Westley (2011),
    Morisse and Ingram (2016), Olsson et al. (2004), Soinnino and Griggs-Trevathen (2013), Steiner

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**Table AI.**

Full list of papers by conversation

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