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## Entrepreneurial Learning From Exit: How Entrepreneurs Learn and Re-emerge Stronger

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## **Entrepreneurial Learning From Exit: How Entrepreneurs Learn and Re-emerge Stronger**

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### **Abstract**

*The entrepreneur's life is a path of learning. This learning to a large extent results from critical events. The exit from an entrepreneurial endeavor as a particularly critical event thus represents an opportunity for rich learning. Entrepreneurs who subsequently re-engage in entrepreneurial activity ("serial entrepreneurs") may therefore achieve improved venture performance. Whereas research already dealt with this learning-caused performance increase of successive business ventures, it still lacks a better understanding of the learning process between exit and re-engagement. Existing studies (1) are limited to certain stages within this process, (2) only deal with single influencing factors (e.g. grief) or (3) discuss certain learning outcomes (e.g. venture management learning). Combatting this fragmentation of research, we aim to draw a comprehensive, dynamic picture of the learning process spanning from exit to entrepreneurial re-emergence. We apply a systematic literature review methodology and provide a conceptual framework of the learning process between exit and entrepreneurial re-emergence. Our findings reveal that the exit indeed triggers a stage of deep reflection that is influenced by attributional and emotional effects and leads to an updated stock of knowledge. Furthermore, there does exist a large variety of learning contents (learning about one's personality, one's environment, one's business capabilities). Many empirical studies confirm that this stock of knowledge gained through learning influences entrepreneurial re-emergence, particularly future venture performance. With these results, our study contributes to research on three dimensions: First, it takes stock of existing knowledge in the field, comprising studies on positive ("successes") and negative ("failures") forms of exit. Second, it provides a conceptual framework that improves our understanding of the learning process between entrepreneurial exit and re-emergence. Third, it reveals promising avenues for further research. We therefore are able to present findings with relevance for various interest groups, including but not limited to science, practitioners and the public.*

**Keywords:** *entrepreneurial exit, entrepreneurial learning, re-emergence, sensemaking, serial entrepreneurship*

Track: *Entrepreneurship*

Word count: 12.362

### **1. Introduction**

Entrepreneurial learning is an important field within the entrepreneurship discipline, which has gained increased attention among scholars in the last two decades (Wang and Chugh, 2014). While initial approaches to entrepreneurial learning had rather static nature, recent perspectives lay emphasis on the dynamic character of learning (Cope, 2005; Minniti and Bygrave, 2001; Politis, 2005). In addition, it is acknowledged that entrepreneurs learn especially from critical events (Cope, 2003), which are inscribed in the cyclical nature of the

economic activity (Aldrich, 2015). Against this background, research on entrepreneurial learning from exit – perceived as a central critical experience the entrepreneur can make – has emerged in the last years (Cope, 2011; Eggers and Song, 2015; Lafontaine and Shaw, 2016; Politis, 2008).

Exit occurs in different forms (Jenkins and McKelvie, 2016). Although it is often associated with business closure and firm bankruptcy or insolvency (Shepherd, 2003), this event also relates to the successful sale of the company (DeTienne, 2010) or can be the result of finding alternative employment opportunities (Stam, Thurik and van der Zwan, 2010). Entrepreneurship scholars initially overlooked exit as a research topic. For many years, the focus of entrepreneurship research was on the creation and growth of new ventures (Chrisman, Bauerschmidt and Hofer, 1998; Cooper, Gimeno-Gascon and Woo, 1994; Sandberg and Hofer, 1987). In the late 1990s, however, this unilateral, success-biased approach to entrepreneurship began to be criticized and the awareness that exit is an inherited part of entrepreneurship process and a common fate of many entrepreneurs began to be promoted (McGrath, 1999). On that premise, the phenomenon of entrepreneurial exit has attracted scholarly attention (Ucbasaran *et al.*, 2013; Wennberg and DeTienne, 2014). Next to the studies on the causes and economic and psychological effects of the exit, part of this research has adopted a learning lens.

The results from this research strand suggest that exit constitutes a valuable learning experience for entrepreneurs (Cope, 2011; Singh, Corner and Pavlovich, 2007; Walsh and Cunningham, 2017). Learning from exit can manifest itself in improved business practices, self-development as well as in the change of attitudes toward risk and failure. Despite the increase in knowledge on this topic, the field yet is still quite fragmented. In addition, some scholars dealing with serial entrepreneurship report about no or limited learning effects resulting from the exit experience (Coad, 2014; Ucbasaran *et al.*, 2010). Consequently, the process of entrepreneurial learning from exit and the long-term effects of the experiential learning associated with exit still need clarification. In order to facilitate this task and thus get a better understanding of the studied phenomenon, we conduct a systematic literature review of the existing knowledge using the Web of Science database. As a basis for the analysis, we take a process perspective that reflects the dynamic character of learning (Cope, 2005). Specifically, the articles are studied along three learning phases: antecedents to learning, learning outcomes, and transfer of outcomes to subsequent ventures.

With the study, we hope to contribute to entrepreneurship research primarily in the following ways. First, by addressing the entrepreneurial exit from a learning perspective, we add to a growing research that aims to provide a more balanced picture of this phenomenon, in addition to frequent studies on reasons and negative effects of exit. Second, by applying a process perspective to study learning from exit, we advance our understanding of the learning path between the exit event and re-emergence in a subsequent entrepreneurial activity.

The paper is structured as follows. The next section describes the research design, including details on the method and procedure employed to select the topic-relevant articles. Descriptive details of the conducted literature review (including information on publication distribution in diverse journals as well as methods used) are subject of the subsequent section. The thematic analysis of the selected articles constitutes the core part of the paper and

comprises three subsections, spanning the entire process of entrepreneurial learning from exit. We conclude by describing the main insights gained from the literature review conducted, limitations of our study and opportunities for further research.

## 2. Research method

We conducted a systematic literature review following the guidelines of Short (2009), who has been already applied by entrepreneurship scholars (Bird, Schjoedt and Baum, 2012; Nason, McKelvie and Lumpkin, 2015; Ucbasaran *et al.*, 2013). As primary source, we chose the Web of Science database of Thomson Reuters as it provides one of the most comprehensive databases of peer-reviewed journals in social sciences (for a similar approach see e.g. Crossan and Apaydin, 2010). According to the business relationship, we limited the search for core collection items including emerging sources. Within this database, we searched simultaneously for title, keywords and abstracts. As papers are settled in various contexts and utilize different terminologies, we had to account for a wide range of search terms. Our search operators were: TS=(((entrepreneur\* AND (((exit\* OR clos\*) OR fail\*) OR ((critical OR discontinuous) AND (event OR incident)))) AND (learn\* OR ((mak\* AND sense) OR cognitive))) OR ((serial OR habitual) AND entrepren\* AND learn\*)) [TS = Topic].

This search agenda led to 398 results. Restricting the range of relevant categories to “Business”, “Management” and “Economic” resulted in a decline to 284 potentially relevant publications. As we intended to provide a full picture of temporal development, we decided to refrain from time restrictions. Thus, 284 articles were our basis for an in-depth screening of titles and abstracts.

To secure a systematic and reliable approach, we defined *exclusion criteria*. The most relevant reasons for exclusion are visible in Table 1 (below). A detailed overview of all criteria leading to exclusion is provided in appendix (Table A1).

<b>Table 1:</b> Exclusion criteria for literature analysis		
Exclusion criterion	Cases	Example
Entrepreneurship focus but no contribution to learning from exit	46	Jones and Li (2017) examining the entrepreneurial microprocesses within a successful start-up
Macroeconomic view of entrepreneurship	27	Yu <i>et al.</i> (2013) examining the interaction of rural entrepreneurs and institutional conditions in Chinese rural areas
Corporate entrepreneurship context	26	Shepherd and Kuratko (2009) investigating the grief recovery and learning process from failed projects
Entrepreneurial learning thematic, yet without exit focus	25	Fuerst and Zettinig (2015) examining the dynamic process of knowledge creation of international new ventures through interaction with network partners

Applying our exclusion criteria, we reduced the sample of relevant articles to 25 publications. The following process of careful reading led us to 12 additional sources passing the exclusion criteria. Thus, our initial sample consisted of 37 publications.

Given the processual perspective of our study, we defined *inclusion criteria* any article within our initial sample must meet to be included into the final sample for literature review. In fact, it had to provide insights to at least one of the following three areas of investigation: (1) antecedents to learning, (2) learning outcomes and/or (3) transfer of experience to subsequent (entrepreneurial) activities. With exception of Pretorius (2008) and Yusuf (2012), which only offered side notes on one of the defined areas, all other articles met the criterion. Thus, our final sample of literature consisted of 35 articles. A comprehensive list of publications including their key findings and other relevant information is provided in appendix (Table A2).

For reasons of validity, we conducted a separate search using Google Scholar. Entering the search term “Entrepreneurial learning from exit ... entrepreneurial learning from failure”, we found a 23 % match with our sample within the first 35 search results. Wang & Chugh (2014), applying a similar approach, received a 36 % match. However, it has to be kept in mind the – unavoidable – variation in search terms. Moreover, applying exclusion criteria to the results delivered by Google Scholar led us to a fictional exclusion of 74 % of the findings. This means that only one additional article (out of 35) met these exclusion criteria at first view, while on closer examination it turned not to meet the inclusion criteria defined. Therefore, one can state that our sample does not only include all relevant studies in journals which are within the Web of Science Sources/Emerging Sources but also at the same time most of the relevant peer reviewed sources outside our primary search database.

### **3. Descriptive analysis of findings**

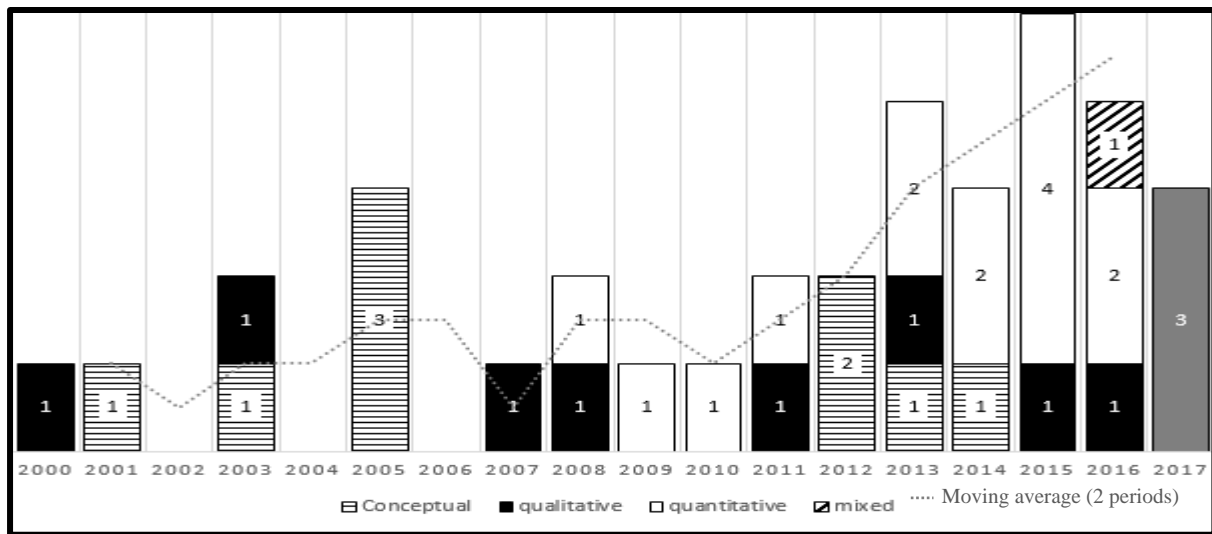
This section aims to give an overview of publication distribution and methodological issues within existing literature. We analyzed the final sample of 35 relevant articles according to thematic codes commonly used in literature reviews (see e.g. Wang and Chugh, 2014): name(s) of author(s); year of publication; country of author’s institution at time of publication; journal title; type of exit; learning type; definitions of exit and learning; processual phases covered; method; sample; key findings. For more details on these factors, see appendix Table A2.

#### **3.1 Publication distribution**

All articles of our final sample are published in peer-reviewed journals, of which 60 % have a specialization on entrepreneurship. Most papers were found in Entrepreneurship Theory and Practice (7), International Journal of Entrepreneurial Behavior & Research (5) and Journal of Business Venturing (5).

Entrepreneurial learning from exit is a highly specialized field of research at the interface of (organizational) learning theories and entrepreneurial exit. Therefore – as shown in Figure 1 – the total amount of relevant publications is rather low. Moreover, the timeline demonstrates that learning from exit is a young topic of research. As we did not apply any time limitation to our search, one can say that the first relevant study was published in 2000. This was when Cope turned scholars’ attention to the importance of critical events as a precursor for higher-level learning (Cope and Watts, 2000). In subsequent years, publication numbers fluctuated at low level with an intermediate peak in 2005, resulting from an Entrepreneurship Theory and Practice special issue on entrepreneurial learning. This issue contributed the highly cited

studies of Cope (2005) and Politis (2005). From 2010 onwards, the amount of papers – even if still on small scale – has been increasing steadily.



**Figure 1:** Publication timeline (Note: for 2017 only relevant studies launched until June are registered)

### 3.2 Methods used

The methodologies utilized for researching the field cover conceptual, qualitative and quantitative approaches. Among the 35 studies in our sample, 9 are applying a purely conceptual lens, 11 use qualitative, 14 quantitative measures and 1 a multi method approach. From a time perspective (see Figure 1), initial studies had a clear emphasis on methods with explorative character (conceptual and qualitative). The first quantitative paper appeared not earlier than in 2008. Since then, however, the share of quantitative studies increased continuously. During the last five years, more than half of all relevant studies applied quantitative analyses.

Within each methodological stream, the approaches with respect to sample and variables vary widely. As shown in Table 2, qualitative studies were based on samples between 1 (Huovinen and Tihula, 2008) and 30 (Walsh and Cunningham, 2017). In 7 out of 11 cases, researchers chose to conduct one in-depth interview per person in sample. 3 studies (e.g. Huovinen and Tihula, 2008) followed a longitudinal approach with two or more interviews. An alternative path towards data collection was followed by Lindh and Thorgren (2016), who decided to use observation as a primary means of data collection.

Among quantitative studies, chosen statistical approaches also varied considerably. These differences become especially apparent by measurement: There are several studies comparing the performance of initial and subsequent entrepreneurial attempts. Performance is thereby regarded as dependent variable. In terms of measurement, studies either tie to survival rates (e.g. Lafontaine and Shaw, 2016; Rocha, Carneiro and Varum, 2015) or income/profit related data (e.g. Chen, 2013; Parker, 2013). Further significant differences between our sample publications are observable in terms of sample size. In fact, samples range from 172 to 1,713,112 entrepreneurs. Additional descriptive statistics are presented in Table 2.

Approach	Amount of publications	Sample			
		Minimum	Mean	Median	Maximum
Conceptual	9				
Qualitative	11	1	12	9	30
Quantitative	14	172	146,119	576	1,713,112
Mixed	1	114	114	114	114

#### 4. Thematic analysis of findings

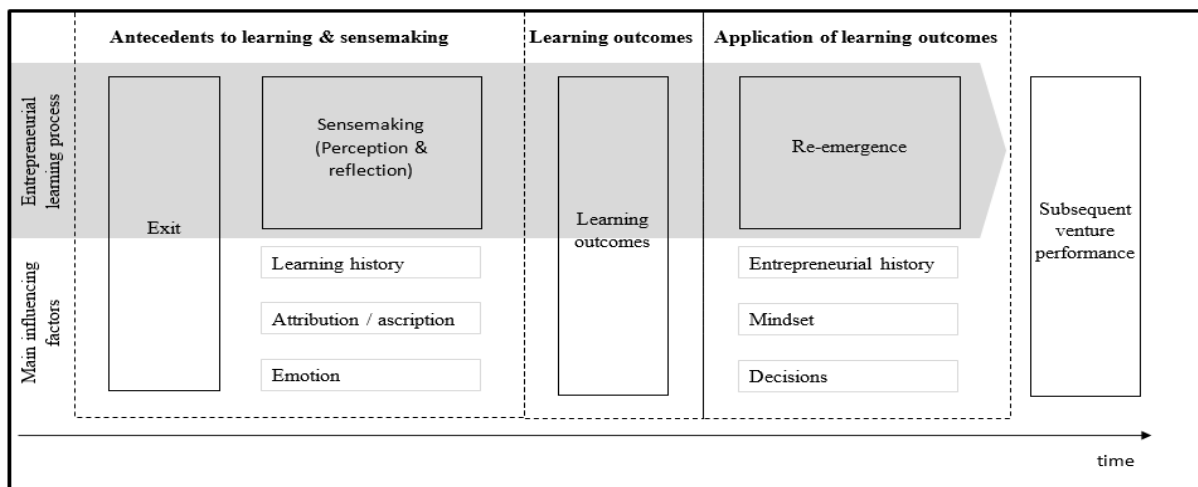
Entrepreneurial learning is an inherently dynamic phenomenon (Cope, 2005). It is a process spanning the entire entrepreneurial life (Minniti and Bygrave, 2001; Pittaway and Thorpe, 2012; Politis, 2005). While exit-induced learning differs on several dimensions from routine learning, it too is regarded as a process (Cope, 2005; Singh *et al.*, 2007; Ucbasaran *et al.*, 2013). This process is caused by the critical event *exit* and may finally lead to improved performance in subsequent venture. Understanding those improvements requires to shed light on the stages between exit and re-emergence (Cope, 2005). We follow this insight by analyzing literature from a process perspective, thus contributing to Cope's (2011) request for dynamic studies.

A first reading of the publications within the selected sample made us aware that our study focus requires looking at two (sub-)processes: First, learning in the narrow sense of updating knowledge. Second, the transfer of this updated stock of knowledge to a new entrepreneurial endeavor. Whereas there is no framework available covering both sub-processes, Cope (2011) as well as Ucbasaran, Westhead and Wright (2011) provide frameworks of the first sub-phase. They provide a set of antecedents that, triggered through the exit, lead to reflection/sense-making, which is seen to be the core of learning activity. In addition, both papers include learning outcomes as the result of this process. For sub-phase 2, papers only provide fragmented insights in how knowledge might be transferred, requiring us to structure them accordingly.

Based on our preliminary insights that learning requires certain influencing factors and leads to specific outcomes, which then are transferred to new activities, we defined three fields of re-search forming the process of learning from exit: (1) antecedents to learning, (2) learning outcomes, (3) transfer of outcomes to subsequent ventures. Each article within our sample offered insights to at least one of these fields of research. Specifically, we found that 22 of these publications provide insights into learning antecedents. Learning outcomes were analyzed by 11 studies. Referring to transferability of outcomes, we found 15 to be relevant. While 22 of all publications contribute to "only" one field, the remaining 13 studies cover two research areas. 9 of 13 studies providing insights to two fields of research cover areas 1 + 2. Interestingly, there are no papers linking distinct learning outcomes from phase 2 to re-emergence in phase 3. The remaining 4 studies link exit to subsequent venture performance.



Based on an in-depth investigation of all papers, we were able to create a framework that covers the process from exit to entrepreneurial re-emergence (see Figure 2 below). This framework shall act as a structure for our subsequent analysis.



**Figure 2:** Process of entrepreneurial learning from exit

Starting point of the entrepreneurial learning process is the exit, which may appear as a successful (e.g. IPO) or an unsuccessful (e.g. bankruptcy) event (DeTienne, 2010; Jenkins and McKelvie, 2016; Wennberg and DeTienne, 2014). The “learning process” triggered by the exit can only be understood appropriately, if related to a variety of further influence factors, referred to as “antecedents”: The individual’s learning history influences how the exit is perceived as well as the efficiency and outcome(s) of the subsequent reflection (Cope, 2005). The perceptions about the exit as well as the attributions to its antecedents also importantly shape the way that the entrepreneur reflects on experience (Yamakawa and Cardon, 2015). In case of negative exit (failure), there is another factor often limiting reflection efficiency: negative emotions like grief create a trade-off between deep reflection, which could mean blaming oneself for a failure and the individual’s quest for personal integrity (Shepherd, 2003).

The outcome of this complex process can be various forms of higher-level learning. This means that previously taken-for-granted beliefs and assumptions are being changed and aligned according to the insights from reflection (Cope, 2003).

Singh *et al.* (2007) along with Shepherd (2003) stress that a final evaluation of learning outcomes is only possible through observation of subsequent action. As with building up new knowledge, its application can too, be seen as a complex process of transformation, influenced by various factors. Thus, entrepreneurial re-emergence does not only depend on the learning outcome itself, but also on various characteristics stemming from the entrepreneur’s history (Eggers and Song, 2015). Moreover, his/her mindset – e.g. the motivation for re-engagement, the degree of mindfulness of application of lessons learnt – influence subsequent performance directly and indirectly via decisions taken (Nielsen and Sarasvathy, 2016; Rerup, 2005). These decisions refer to management handling, proximity to prior industry, location etc. Together they shape the entrepreneur’s re-engagement performance (Eggers and Song, 2015).

#### 4.1 Entrepreneurial learning and its antecedents

This section discusses important factors influencing entrepreneurial learning and the way that they interact to build new knowledge. Aggregating insights of these factors and their interrelations will enable us to elucidate the process from exit to learning outcomes.

##### 4.1.1 Exit

Entrepreneurial exit can be seen as the trigger for the entrepreneurial learning process (Lindh and Thorgren, 2016). It is a highly critical event influencing both, business and personal life of an entrepreneur (Cope and Watts, 2000). Cope (2003) argues that most of entrepreneurial learning traces back from critical events. More than does routine work, critical events can trigger deep reflection resulting in “higher-level learning”. Drawing on the work of Fiol and Lyles (1985), Cope (2003) states that these “shocks, jolts, crises” are necessary for unlearning and readapting to take place. Although the “critical event” and its variants “shocks, jolts, crises” appear to have a negative connotation, the notion also includes positive outcomes like profitable selling and Initial Public Offerings (IPO) (Jenkins and McKelvie, 2016).

Whereas in organizational learning context, contrasting the learning benefits of successful vs. unsuccessful project outcomes, has been field of interest for several years now (Paik, 2014), there are no comparable studies within entrepreneurial exit context. Most learning-related papers either regard exit to success or to failure without accounting for nuances in between. Referring to entrepreneurial learning in general, Minniti and Bygrave (2001) state that success as well as failure might be antecedents to learning. Coad (2014) is critical about the learning benefits from failure. Conversely, Cope (2005) suggests that in particular significant negative mistakes may lead to higher-level learning. Ucbasaran *et al.* (2013), drawing on the work of Sitkin (1992), argue, that success may lead to an increased confidence in existing mental models while failure is likely to provoke a change in mindset.

One further challenge to approach exit is the lack of objective means of measurement for its degree of criticality (Cope and Watts, 2000). The relationship between exit as a critical event and the consequent reflection is moderated by the perception of the exit (Lindh and Thorgren, 2016). The extent to which an exit is perceived as a critical event is dependent on the entrepreneur’s personality and experience (Lindh and Thorgren, 2016; Politis and Gabriellsson, 2009). In fact, Lindh and Thorgren (2016) found that individuals with strong emotions regarding fear of failure as well as aversion of risk and ambiguity are more likely to recognize an event as critical. This means, that even in case of objectively comparable levels of criticality, individuals’ perceptions vary widely. Lindh and Thorgren (2016) defined a dichotomous way to perception of criticality: Entrepreneurs who take the so-called “low path” direction do not perceive an event as critical. Thus, they do not see a necessity to reflect and therefore do not achieve recognizable learning results. On the other hand, there are individuals who take the “high path”. This means that they recognize the criticality of an event and thus feel the necessity to reflect. They revise their thoughts, business approaches, behavior and mindset and are able to learn. Therefore, the exit is indeed trigger to reflection, however only on the condition that it is perceived as a critical event.

##### 4.1.2 Sensemaking from exit

Sensemaking is a complex process aimed at giving meaning to occurrences (Ucbasaran *et al.*, 2013). It involves a variety of interrelated cognitive and emotional factors (Schwandt, 2005). The following paragraph will first concentrate on the “direct route” from an exit perceived as critical via scanning and reflecting towards learning. In a second step, we will discuss main factors of influence, particularly stemming from the entrepreneur’s emotional sphere.

Entrepreneurs, who perceive an exit as critical, may initially immerse into a phase of scanning (Ucbasaran *et al.*, 2013). This means that he/she pays selected attention to information regarding the exit and collects this data with the aim of further reflection on it (Ucbasaran *et al.*, 2013). The reflection can be seen as a stage of information processing and attaching meaning to the explored insights. According to Cope and Watts (2000), reflection requires a certain (timely and emotional) distance to the event. Pittaway and Thorpe (2012), interpreting Cope's lifetime contribution to the field of entrepreneurial learning, portray reflection as a process of four interrelated activities: looking backward, reminiscing the experience, forward to further possible actions, outward to the environment and inward to oneself. In this way, the entrepreneur can detect patterns and process corrections, which allows for more successful performance in the future.

#### 4.1.3 Learning History

Minniti and Bygrave (2001) regard learning to updating a subjective stock of experience. In fact, an individual's learning history influences sensemaking in terms of content and cognitive processing capacity. Politis (2005) views learning as a transformation process and highlights that transformation requires a content to be transformed. This insight is supported by Mueller and Shepherd (2016), who add that benefits of failure experience are dependent on the level of prior knowledge. Focusing on negative forms of exit, they argue that in cases where knowledge already exists, business failure providing the same "learning lesson" may not lead to additional insights. Apart from the content dimension, learning history also influences the processing of new information. Firstly, one's learning history determines how information is perceived (Cope, 2005). Secondly, Mueller and Shepherd (2016) – examining structural alignment in opportunity recognition as specific form of learning – find so-called "opportunity prototypes". Opportunity prototypes are typical representations of events or objects, which act as a means for structural comparison. With richer experience, the entrepreneur develops a larger number and therefore more fine-tuned set of prototypes, which helps him/her in the evaluation of new situations. Apart from this rather heuristic tool, entrepreneurs may also use what Mueller and Shepherd (2016) refer to as "professional knowledge". This allows the individual to connect better and faster to existing knowledge and therefore to improve the learning performance (Mueller and Shepherd, 2016).

#### 4.1.4 Attribution of (failure) causes

The extent and the flow of reflection are significantly influenced by the attribution of reasons to the critical event. Different to previous influence factors, attribution is discussed only in the context of failure (e.g. Eggers and Song, 2015; Walsh and Cunningham, 2017; Yamakawa, Peng and Deeds, 2015).

Yamakawa and Cardon (2015) distinguish two possible pathways the entrepreneur may choose in case of failure: internal, unstable attribution and external, stable attribution. Internal, unstable attribution refers to a cognitive pattern of blaming oneself for the cause of failure. Thus, the entrepreneur sees the cause of failure in a lack of his/her skills, management expertise or financial planning. This internal approach enables so called counterfactual thinking, a type of reflection that enhances the understanding of cause-effects-relationships. Therefore, rich learning can be expected, changing the previously erroneous mindset and making the failure cause unstable. In another study, Yamakawa *et al.* (2015) confirm this generally positive functional chain. However, they highlight that there exists a threshold depending on the failure intensity. Thus, in cases of very strong failures, the resulting negative emotions may limit learning.

With respect to the other pathway, the entrepreneur may choose, is to ascribe causes of failure to external, stable factors (Yamakawa *et al.*, 2015). This means that he/she perceives failure as a result of unfavorable external conditions like strong competition and environmental uncertainty. This approach may prevent the entrepreneur from intensive negative emotions (reduced levels of shame and grief) at the cost of limited learning. Moreover, as the external factors are perceived as stable, the entrepreneur may react by re-engaging in another sector, which might deteriorate experience advantage further. Eggers and Song (2015), investigating entrepreneurial learning among serial entrepreneurs, explored this pattern as well. They concluded that learning may be possible, however very difficult.

Unlike the studies quoted above, Walsh and Cunningham (2017), in their recent empirical investigation did not primarily link attribution to the amount of learning but to different learning contents. They explored three different types of failure ascriptions: internal, external and hybrid. Internal failure ascription triggered affective responses leading to person-related learning outcomes, i.e. “learning about oneself”. Entrepreneurs who attributed reasons of failure to external causes showed behavioral changes with regard to venture and network/relationship dimensions. Hybrid approaches combining internal and external ascription led to cognitive responses with regard to venture management.

#### 4.1.5 Emotional sphere

Exit as an exceptionally critical event strongly impacts the entrepreneur’s emotional sphere (Dias and Teixeira, 2017). Although it seems fair to assume that positive forms of exit may also provoke considerable emotional responses, relevant research is invariably focused on failure-related emotions. The concrete emotional impact thereby depends on various factors like the entrepreneur's experience, age and perception of blame. Failure-induced emotions comprise regret, disappointment, frustration, pain, remorse, shame, anger, guilt, blame, depression and the development of phobias (Byrne and Shepherd, 2015; Singh *et al.*, 2007; Ucbasaran *et al.*, 2013). Unlike most researchers, Byrne and Shepherd (2015), drawing on further literature do not only provide a set of negative, but also positive emotions (e.g. feelings of pride, confidence and enthusiasm). This implies that failure as the negative form of exit may facilitate positive emotional outcomes as well.

Despite the commonly shared awareness of emotional diversity, research mainly focuses on grief as one specific form of emotion. This stream has been established by Shepherd (2003), who applied psychological insights to entrepreneurial context. Shepherd argues that grief as a negative emotional response to failure may interfere with the entrepreneur’s allocation of attention. He introduces the example of a failed entrepreneur who – upon thinking back – primarily remembers emotion-laden aspects like returning the store keys and therefore lacks time for adequate reflection. Overcoming grief as an obstacle to learning requires efforts ranging in two directions. On the one hand, in the close aftermath of failure, the entrepreneur might feel the need to distract himself/herself from thinking about the loss (“restoration orientation”). Cope (2011) refers to this as an “initial hiatus”, a process of stepping back in order to heal emotionally. On the other hand, Shepherd (2003) and Cope (2011) similarly note that from a certain point, active engagement with the failure becomes inevitable for recovering and learning (“loss orientation”). In addition, Shepherd (2003) argues that founding a new company might also accelerate recovery from failure. However, this way of coping involves the danger of repeating mistakes due to insufficient learning (Shepherd, 2003). Instead, “oscillation” between restoration and loss orientation is seen as the ideal way towards recovery and subsequent learning. This means that the entrepreneur switches between these orientations. Reduced grief after stages of restoration orientation may enable

him/her to focus for some time / to a certain extent on the loss, followed by a further phase of restoration. This dual process shall continue until the entrepreneur has recovered. Two existing empirical studies – set within slightly different contextualizations – appear to support Shepherd’s view of grief as a learning barrier that can most efficiently be reduced by oscillation between restoration and loss orientation (Cope, 2011; Singh *et al.*, 2007).

One recent study by Byrne and Shepherd (2015) – while generally supporting the approach too – offers another perspective on the underlying process. The authors asked failed entrepreneurs for their overall emotional feeling at time of exit and after some time has passed. Linking the responses to the respective learning progress, they found that strong negative emotions at the beginning followed by strong positive emotions are the most effective constellation for learning. In this way, the negative emotions trigger deep reflection, which is – as already discussed – a key determinant of learning. The process of reflection (probably via oscillation) enables the entrepreneur to reduce grief and to concentrate on failure causes.

Summing up, the exit triggers a process of sensemaking that is influenced by the entrepreneur’s learning history, the attribution of exit causes and a range of emotions. These factors interact to build an updated stock of knowledge, which we refer to as “learning outcomes”.

#### **4.2 Learning outcomes**

Learning from critical events impacts the entrepreneur’s existing mental models in a variety of ways (Cope, 2011; Singh *et al.*, 2007). As already mentioned, most of these learning outcomes are “higher-level learning” (Cope, 2003). This means that learning from business exit has the capacity to deeply challenge or redefine existing cognitive models. With regard to the learning content, previous research found evidence of learning within the personal, social, venturing and entrepreneurial sphere (Cope, 2005; Cope, 2011; Lindh and Thorgren, 2016; Singh *et al.*, 2007).

Learning about oneself comprises insights in ones’ strengths, weaknesses, skills, attitudes, beliefs, areas for development as well as interests and motivations (Cope, 2011; Lindh and Thorgren, 2016). Cope (2011) links these outcomes to the concept of “transformative learning” (Mezirow, 1991). Transformative learning is a higher order-form of learning with a distinctly personal dimension, able to induce profound changes in “the self” of the entrepreneur (Cope, 2003; Cope, 2011; Mezirow, 1991). Walsh and Cunningham (2017) found that this learning outcome – different from others – also appears in situations of extended grief. In case of a failure-induced exit, learning about one’s personality requires to primarily attribute failure causes to oneself (Walsh and Cunningham, 2017). This may also reflect reality in many cases, as the exit as a catalyst for transformative learning often is self-imposed (Pittaway and Thorpe, 2012). A sustainable, critical focus on areas for personal (and for business) development may in the long run lead to what Lindh and Thorgren (2016) coin a “continuous reflective ability”.

Learning about social relationships spans improved insights in nature and management of social networks inside and outside the venture (Cope, 2011). The range of network partners is wide, including e.g. the entrepreneurial team, employees, customers, suppliers, competitors, advisory agencies, support services. The better understanding and ability to handle social ties may forward the ability to seize and spot entrepreneurial opportunities (Politis, 2005).

Venture-related learning outcomes include enhanced experiences with reference to the (former) enterprise's strengths, weaknesses, opportunities and threats (Cope, 2005). Moreover, entrepreneurs may gain a clearer picture of internal business needs, requirements for growth and future strategic directions (Cope, 2005). These outcomes result from double-loop learning, a means of higher-level learning enabling a renewed understanding or redefinition of organizational processes and strategies (Cope, 2011).

Learning about entrepreneurial activities refers to entrepreneurial tasks in a narrower sense (recognizing opportunities, coping with the liabilities of newness) as well as to more general venture management activities. The former have been discussed in a conceptual work of Politis (2005), who sees improvements in opportunity recognition and liability handling as primary outcomes from entrepreneurial learning. This conceptualization of entrepreneurial learning has been applied empirically by Huovinen and Tihula (2008). On basis of a single-case analysis, the authors demonstrate and support Politis' concept. In the context of business failure, Mueller and Shepherd (2016) found further evidence that learning from failure may lead to improved abilities of opportunity identification. This, however, requires the use of proper cognitive tools like a certain style of sensemaking (Mueller and Shepherd, 2016). With regard to general venture management activities, Cope (2011) describes that learning how to run and control a business may result from critical events. He links this learning to Gibb's (1997) concept of generative learning, implying that the entrepreneur may become more proactive in future venturing decisions.

To sum up, literature found a variety of higher-level learning outcomes. These referred to the entrepreneur's personality, his/her entrepreneurial abilities including an improved understanding of the former venture as well as his/her social ties.

### **4.3 Application of learning outcomes: entrepreneurial re-emergence**

Shepherd (2003) argues that the most effective application of entrepreneurial learning is to re-engage in entrepreneurial activity. In slight contrast, Cope (2011) advocates a broader view, stating that there might be various ways to utilize learnt experience effectively. Examples of bringing learning forward apart from new company foundation are provided by Singh, Corner and Pavlovich (2015). They found prior entrepreneurs to be actively engaged in entrepreneurial networks, acting as mentors and consultants. While we acknowledge this extended view of learning application – according to our study focus (link between exit and subsequent venture performance) – we will concentrate on the transformation of learning into new entrepreneurial endeavors. Given the high interrelatedness of factors, we decided for an aggregated approach, structuring the drivers based on time-logic into three clusters. While we thereby assume that the main influence works in ascending order, we are aware of possible back-loops, multi-directional influences and blurred lines within the definite influence directions. Further, we want to state that despite the clusters build upon another, there are also direct relationships between each cluster and the subsequent venture performance.

The first cluster “entrepreneurial history” covers aspects stemming from former (entrepreneurial) experience, like the degree of entrepreneurial seriality, the outcome of previous entrepreneurial attempt(s) as well as his/her education and pre-experience. These basic conditions shape the second cluster “mindset”, which decides if and how re-engagement decisions are being taken. The decision “if” is thereby determined by the motivation for re-engagement, which is strongly interrelated with the ascription of previous outcome(s) and the individual's perception towards learning. The “how” relates to the question of how mindful acquired knowledge is being applied for the subsequent endeavor.

The third cluster covers the resulting decisions, i.e. management, industry and geographic similarity as well as temporal proximity between exit and re-engagement.

#### 4.3.1 Entrepreneurial history

The entrepreneur's history considerably influences subsequent venture performance as it shapes mindset and entrepreneurial decisions (Cope, 2005). Literature reports on three cornerstones: the degree of seriality (extent of prior venturing activities), the outcome(s) of these attempts and the entrepreneurial education.

Degree of seriality: Serial entrepreneurs are entrepreneurs who, after an exit, re-engage in entrepreneurial activity (Westhead and Wright, 1998). Motivated by the conceptualizations of entrepreneurship as a continuous learning process (e.g. Cope, 2005; Minniti and Bygrave, 2001), researchers empirically investigated the proposed experience-performance ratio among serial entrepreneurs (Rocha *et al.*, 2015). The results varied widely: Lafontaine and Shaw (2016) as well as Paik (2014) clearly found evidence that serial entrepreneurs become more successful in subsequent ventures due to learning. Parker (2013), despite also agreeing on learning-related performance improvements, stresses the importance of a short time distance between two venturing episodes due to depreciation effects. Rocha *et al.* (2015) found serial entrepreneurs to have superior performance on subsequent attempt. However, Rocha *et al.* (2015) argue that this is because of a selection bias: They found serial entrepreneurs to be a special sample of above-average entrepreneurs, who also upon the first attempt experienced superior outcomes. Chen (2013), except for cases of high industry similarity between subsequent venture episodes, comes to a similar conclusion. According to Eggers and Song (2015), in cases of failure-related exit, this similarity is often deliberately avoided. Serial entrepreneurs tend to ascribe failures to the external sphere. For the subsequent venture, they therefore decide to challenge this failure cause by changing the industry. This, however, is found to constrain effective application of generated industry specific knowledge.

Outcomes of previous attempt(s): As already mentioned, exit can appear as success or failure. Up to now, comparative research on consequences from success and failure is scarce. In fact, there is only broad conceptual work on learning that discusses differences between reactions to success and failure: Politis (2005), drawing on previous work of Sitkin (1992), argues that success may strengthen existing mindsets while failures may lead to change of mindset and behavior. This is in line with Rerup (2005) who states in the context of habitual entrepreneurship (sequential or parallel entrepreneurial activity in two or more ventures) that successful habits are repeated while failure might lead to a change in behavior. Focusing on failure-related exits, Nielsen and Sarasvathy (2016) stress a problem of repeated business failures due to overconfidence. They find failed entrepreneurs to believe that failure by itself leads to learning and therefore show a high likelihood of re-engagement and repeated failures. Yamakawa *et al.* (2015) introduce a curvilinear relationship between extent of failure and subsequent venture performance. Whereas failure might lead to learning, extended amounts of failure do not necessarily create as large learning effects but harm the reputation, morale and sanity of the entrepreneur. Therefore, a middle level of failure is associated with highest subsequent venture performance.

Education / Pre-experience: Lessons learnt from a previous exit require to be contextualized to the subsequent venturing activity. Thus, even if learning has taken place, in order to profit from it, the entrepreneur is required to properly transfer his/her insights to a new context. Nielsen and Sarasvathy (2016) found a positive relationship between specific kinds of

human/social capital and the survival of subsequent ventures. Further, they problematize the probability of drawing incorrect conclusions from previous experience. They refer to one example from literature: A cat that jumps on the hot stove will never jump on it again – even if it is cold. This reasoning is in line with the findings of Toft-Kehler, Wennberg and Kim (2014). They described a non-linear relationship between learning and subsequent venture performance. Entrepreneurs with little to moderate pre-experience may generalize learnings from previous endeavors to superficially similar, but actually different contexts. This behavior may lead to progressively worse performance of subsequent venturing episodes. Expert entrepreneurs, on the other hand, correctly interpret and apply lessons from the past, enabling them for increased venturing success.

#### 4.3.2 Mindset

An individual's mindset determines whether he/she is willing to re-engage in entrepreneurial activity ("motivation") and how he/she adapts experience to new episodes ("mindfulness"). The mindset is to a large extent a product of the entrepreneur's history (Haynie *et al.*, 2010). However, different from the above-described biographical factors, individuals may have the possibility to deliberately change certain aspects of their mindset in order to succeed in subsequent venturing activities.

Motivation to re-engage: As we are interested in the learning-induced success of re-entrants, the entrepreneur's acceptance to re-engage in entrepreneurial activity is inevitable. This motivation for re-engagement has been discussed primarily in failure-related literature so far. Interestingly, there is broad agreement that previous failure does not constrain further entrepreneurial activity (Nielsen and Sarasvathy, 2016; Stam, Audretsch and Meijaard, 2008; Ucbasaran *et al.*, 2013; Ucbasaran *et al.*, 2010). This phenomenon is explained by (assumed) learning (Stam *et al.*, 2008). As already discussed, some entrepreneurs (mis-)understand learning as an automatic process, which might lead them to further failures (Nielsen and Sarasvathy, 2016). As young entrepreneurs perceive failure in a more positive light than their older counterparts, they might be particularly often confronted with this phenomenon (Dias and Teixeira, 2017). Moreover, serial entrepreneurs with extended venturing experience may create over-confidence based on learning and continuously re-engage without visible performance improvements (Ucbasaran *et al.*, 2013; Ucbasaran *et al.*, 2010).

Eggers and Song (2015) as well as Yamakawa *et al.* (2015) see a connection between the primary direction of failure ascription and motivation for a restart. They argue that external failure ascription might lead to a higher probability of re-engagement. In the opposite case (internal failure ascription), entrepreneurs might see themselves as not smart enough and therefore refrain from re-engagement. However – as already discussed – external failure ascription may limit or misalign learning. In particular, it might lead to a change in industry instead of management style and limit effective transfer of learning (Eggers and Song, 2015). Therefore, a degree of internal failure ascription that leads to effective reflection and does not prevent re-engagement might be best for subsequent venture performance (Yamakawa *et al.*, 2015).

Mindfulness: Mindfulness refers to the entrepreneur's ability to transfer learning outcomes to subsequent entrepreneurial episodes (Rerup, 2005). As two venturing episodes never are completely equal, entrepreneurs have to properly adapt previous knowledge. A mindless transfer of a previous successful business model to a subsequent venture may thus lead to poor performance. Mindful application of prior experience is particularly important in dynamic venture, industry and/or technology contexts as they often lead to changes in



context. As mindfulness requires extended efforts and time, the degree of mindfulness upon knowledge transfer should be adapted to the specific situation, e.g. in case of broad similarities between two venturing episodes, levels of mindfulness can be lower (Rerup, 2005).

#### 4.3.3 *Transfer-related decisions*

Literature examining learning-based performance increases of entrepreneurs provides a set of context-related decisions, which are found to have particular strong influence on effectiveness of learning transfer. These decisions incorporate the similarity of industry, management and location as well as the time lag between two venturing episodes. Toft-Kehler *et al.* (2014) conceptually and empirically demonstrate that high levels of similarity/short time lags positively influence subsequent venture performance.

As far as industry similarity (including venture similarity) is concerned, three different studies unanimously report a positive influence on future venture success (Chen, 2013; Eggers and Song, 2015; Rocha *et al.*, 2015). In fact, Chen (2013) finds cases of high industry similarity to be the only context where a positive relationship between learning and future venture performance exists. Eggers and Song (2015) provide an explanation why – despite being valuable from a learning perspective – entrepreneurs who experienced a failure-related exit resign re-emerging in the same industry: As already discussed, the authors problematize that entrepreneurs try to change the aspect they assume to be the reason for failure. Thus, in case of external failure ascription, they decide for an industry change. With regard to management and geographic similarity the same reasoning applies. In case of management style, however, changes and adaptations can be processed more easily, making this decision context less problematic in terms of wrong decision-making.

The similarity factors described above require temporal proximity between two entrepreneurial episodes. In general, learning outcomes are more valuable if they are quickly applied on future endeavors (Toft-Kehler *et al.*, 2014). Parker (2013) discovered a depreciation effect of learning over time. This effect might be particularly strong in cases of high market dynamics. Further empirical investigation of time lags as moderators for a learning-performance relationship has been provided by Yamakawa and Cardon (2015). The authors demonstrate that perceived learning of entrepreneurs, who made internal failure ascriptions, was higher in cases of earlier re-emergence. Drawing on all the empirical evidence quoted, it appears adequate to assume a positive context similarity influence on subsequent venture performance.

Summing up, successful application of learning outcomes upon re-emergence depends on various factors. These comprise the entrepreneur's history, his/her mindset and the subsequent decisions regarding context. Due to the high interrelatedness of these factors, finding a clear causal relationship is in this stage particularly challenging.

## 5. Conclusion

The exit of an entrepreneur from the company he/she founded has the potential to induce an episode of deep learning that enhances entrepreneurial skills for future endeavors (Cope, 2005). A number of studies found empirical evidence of improving entrepreneurial performance due to learning (Lafontaine and Shaw, 2016; Millsted, Redmond and Walker, 2017; Morris *et al.*, 2012; Paik, 2014). From a research perspective, it seems interesting to understand how this learning takes place. Existing literature provides insights with regard to single influence factors or stages of learning. Applying a systematic literature review

methodology, we have been able to integrate these insights into a conceptual framework of the learning process from exit to re-emergence. We found evidence that learning does not happen automatically, but is the result of a number of inter-related influence factors. In the direct aftermath of the exit, the entrepreneur may immerse into a period of sensemaking that leads to a variety of learning outcomes (related to the own personality, to social ties as well as to entrepreneurial/management skills). One potentially effective way to utilize these lessons learnt is to re-emerge into entrepreneurial activities. The questions *if* and *how successfully* experience is transferred to subsequent ventures depend on the entrepreneur's history, his/her mindset and the resulting decisions.

With our insights, we are able to provide first explanations how and why entrepreneurs may become better in subsequent venture episodes due to learning. To our knowledge, it is the first study to review literature on learning from exit that deals with creation *and* application of entrepreneurial experience. Up to now, most literature in this field has focused on certain aspects (e.g. grief as influence factor – see Shepherd, 2003) or stages (e.g. knowledge creation – see Walsh and Cunningham, 2017) of this process. In our conceptual framework, we arranged these fragments in a dynamic order ranging from exit to re-emergence. Stage 1 describes which and how antecedents contribute to the process of sensemaking. The resulting learning outcomes are focus of section 2. In phase 3, we present how these outcomes may be transferred to new entrepreneurial episodes. With this structure, we integrate fragmented research and also extend the few existing broader conceptualizations' range of analysis (Cope, 2005; Cope, 2011; Eggers and Song, 2015; Ucbasaran *et al.*, 2013): Apart from preliminary thoughts on knowledge application (e.g. Cope refers to this as “generative learning”), Cope and Ucbasaran *et al.* primarily focused on sections 1 and 2 of our framework (creation and content of knowledge). Moreover, the studies of Cope (2011) and Ucbasaran *et al.* (2013) are contextualized within the frame of failure (thus negative exits). Eggers and Song (2015) too base their study on failure. Yet, they focus on knowledge transfer and thus mainly contribute to stage 3 of our framework. Although the above-mentioned broader studies provide a quite comprehensive view on their related focuses, our literature analysis revealed several additional dimensions influencing the learning process. By integrating them, we hope to provide an even more nuanced picture of how entrepreneurs learn and re-emerge.

However, we are aware that there might exist additional dimensions, which have not been discussed in research so far. As we focused on literature from entrepreneurial context, our framework does not include learning-related work from organizational context (e.g. team member learning resulting from project failure – see Shepherd *et al.*, 2014). We found employed working situations within organizations to be too different from entrepreneurial life. The particularly strong bond between the entrepreneur and his company as well as the high financial and social risks associated with entrepreneurial activity might not allow the transfer of studies from organizational context (Shepherd, 2003). Nevertheless, we admit that – due to the large extent of organizational learning literature – a look at these studies might uncover additional factors influencing learning from critical events.

Despite the clear focus on exit-related learning in entrepreneurial context, we are aware that our framework is based on studies, which derive from a range of different sub-contexts, methodological approaches and working definitions. It can thus only act as a first, broad guideline for a holistic understanding of learning from exit. This is particularly true with regard to sub-dimensions and their inter-relationships, which in some cases could only partially be elaborated. These limitations can be approached via two future research streams:

First, we find that a qualitative study could utilize our framework as a guide for semi-structured interviews. In this way, our framework could be empirically tested and potential misconceptions induced by the contextual/methodological/definitorial heterogeneity of studies included, could be uncovered. Second, research could focus on certain influence factors within our framework. We found some of these drivers to be under-researched (e.g. mindfulness) or biased (e.g. grief as the only emotional factor). Qualitative research efforts could close these still existing gaps and in this way further enhance our understanding of the exit-induced learning process.

The understanding of how entrepreneurs learn and re-emerge stronger is not only interesting from a researcher's perspective. In fact, our study holds several important implications for practice. Statistics of business death rates in the EU demonstrate that within five years, more than half of the companies founded disappear from the market. Based on our findings, we can support the view, that the regarding entrepreneurial exits bear the potential for rich learning. Entrepreneurs – even in cases of failure – do not need to assume a general and everlasting lack of entrepreneurial qualification. This insight also holds implications for the public. Country government should in general support revolving entrepreneurial activities as they may lead to successively superior outcomes. However, as our findings also revealed that learning from exit does not happen automatically, entrepreneurs and the public should be aware of the factors that influence learning success. There are several dimensions, which are – at least partly – controllable by the individual (e.g. emotions, failure ascriptions, re-emergence decisions). Our insights may enable entrepreneurs to better control these factors. In this way, our study can contribute to effective learning from exit and a successful application of this learning in future entrepreneurial activity.

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## Appendix

**A1:** Details on exclusion criteria for review

**A2:** Literature overview

<b>Table A1: Details on exclusion criteria for review</b>	
Exclusion criterion	Cases
Focus on entrepreneurship-related topics without contribution to learning from exit	46
Macroeconomic view of entrepreneurship even if related to learning from exit	27
Corporate entrepreneurship context	26
Entrepreneurial learning thematic, yet without exit focus	25
Management/business related studies without focus on entrepreneurial learning and/or exit	24
Organizational or industrial learning perspective	23
Learning set in education context i.e. school, university, incubator	22
Irrelevant research topic due to equivocality of certain search terms (e.g. instead of clos* for closure or closed down business "to remain close to")	18
Exit thematic(s), yet without or insufficient focus on learning	11
Public management perspective of entrepreneurial activities	10
Other reasons: Product/technology related learning focus; traits related approach; part-time entrepreneurship focus; focus on methodological aspects; learning outside entrepreneurial context	22

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**Table A2:** Literature overview

Authors	Year	Country	Journal	[1] Antecedents	[2] Learning Outcomes	[3] Transfer	Method	Sample	Key Findings
Byrne and Shepherd	2015	UK, US	Entrepreneurship Theory and Practice	1			Empirical (qualitative)	interviews with 13 entrepreneurs who failed [Country: United Kingdom]	The authors examine the relationship between emotion and perceived learning. In fact, they ask entrepreneurs for their emotional state upon and after business failure. Most perceived learning is reported by those who initially felt negative emotions changing to positive emotional status after the failure. This implies that negative emotions act as trigger for sensemaking whereas positive emotions are important for broadening and building knowledge.
Chen	2013	DK	Journal of Economics & Management Strategy			3	Empirical (quantitative)	3,265 entrepreneurs [Country: Denmark]	Learning-by-doing is less important than selection on ability in explaining serial entrepreneur's performance. In fact, only in cases of strong industry similarity, a clear positive relationship between learning by doing and the subsequent performance is visible.
Coad	2014	UK	International Small Business Journal		2		Conceptual		Critical evaluation of the tendency to see business failure - based on the assumption of being a valuable opportunity for learning - as something positive. The author reminds of the lack of large-scale empirical evidence supporting the positive effect of failure on learning.
Cope	2011	UK,	Journal of Business Venturing	1	2		Empirical (qualitative)		Learning from failure is a process highly related with emotions. After an initial hiatus, the entrepreneur typically enters in a stage of deep, critical reflection, which may lead to future reflective action (thus reengagement in entrepreneurial activities). Outcomes of this reflective process may be various learning contents: They comprise learning about oneself, about one's venture, about networks and about venture management.
Cope	2005	UK	Entrepreneurship Theory and Practice	1	2		Conceptual		Cope offers a conceptual framework for entrepreneurial learning in general. Thus, learning may appear from routine work or critical events. Critical events (e.g. failure) may trigger a deep reflection that leads to so called higher-level learning. Higher-level learning has the potential to radically change the entrepreneur's assumptions and values underlying his action. It can be either double-loop, changing one's assumption about organizational aspects or transformative, changing one's picture about the own personality. In either case, learning should be generative, which means that it is applicable for further action.
Cope	2003	UK	Management Learning		2		Empirical (qualitative)	6 entrepreneurs [Country: United Kingdom]	Critical events lead to more learning than the entrepreneur's routine work. In fact, critical events may lead to various forms of higher-level learning. After highlighting a number of dichotomous conceptualizations of higher-level learning types, Cope focuses on the differences between double-loop learning (targeting organizational aspects) and transformative learning (targeting the entrepreneur as a person).
Cope and Watts	2000	UK, UK	International Journal of Entrepreneurial Behavior & Research	1			Empirical (qualitative)	6 entrepreneurs [Country: United Kingdom]	Cope and Watts discuss the importance and characteristics of critical events as antecedents to higher-level learning.
Dias and Teixeira	2017	PT, PT	European Journal of Management and Business Economics	1		3	Empirical (qualitative)	6 entrepreneurs, 3 from the north of Europe, 3 from the south [Country: various in Europe]	Qualitative study on business failure, which investigates - based on the conceptualization of Ucbasaran the aftermath of failure events. Thereby, one aspect examined was learning. The results are in line with theoretical reasoning of Ucbasaran.

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**Table A2:** Literature overview

Authors	Year	Country	Journal	[1] Antecedents	[2] Learning Outcomes	[3] Transfer	Method	Sample	Key Findings
Eggers and Song	2015	US, CN	Academy of Management Journal	1		3	Empirical (quantitative)	253 serial entrepreneurs [Country: China (Beijing)]	Learning from failure is difficult due to erroneous attributions: Entrepreneurs attribute the reasons for their failure primarily to external factors. They change them (namely: the sector) when opening their subsequent business while retaining other internal aspects (management etc.). Thus, sector-specific knowledge cannot be transferred properly leading to poorer performance.
Huovinen and Tihula	2008	FI, FI	International Journal of Entrepreneurial Behavior & Research	1	2		Empirical (qualitative)	1 portfolio entrepreneur [Country: Finland]	Examining the experiences of a portfolio entrepreneur, the authors test and confirm the conceptual framework of Politis (2005) empirically.
Lafontaine and Shaw	2016	US, US	Journal of Labor Economics			3	Empirical (quantitative)	1.713.112 entrepreneurs in retail sector [Country: Texas, USA]	Entrepreneurial skills can be learnt. A study among small business serial entrepreneurs demonstrated, that even when the person fixed effect (that would act as a proxy for talent) is being controlled, subsequent businesses are more successful.
Lindh and Thorgren	2016	SE, SE	Management Learning	1	2		Empirical (qualitative)	15 participants of a summer camp for entrepreneurship	Critical events are important triggers for reflection, an antecedent to higher-level learning. However, it is not the critical event itself, which influences this development path. In fact, critical events are subjective impressions - an event is seen as critical depending on personal characteristics of the entrepreneur. The phase of reaction and reflection to an event perceived as critical may lead to different outcomes regarding the personality of the entrepreneur and his/her skills.
Millsteed, Redmond and Walker	2017	AU, AU, AU	Australian Occupational Therapy Journal	1			Empirical (qualitative)	26 self-employed therapists [Country: Australia]	Based on an investigation of learning patterns of self-employed therapists in Australia, the authors find that Learning happens in three ways: (1) learning prior to starting the business (2) learning by doing in everyday life (both types being lower-level) and (3) higher level learning through discontinuous events.
Minniti and Bygrave	2001	US, US	Entrepreneurship Theory and Practice	1			Conceptual		The authors offer a model that describes how, based on an existing stock of knowledge, decisions are taken. In fact, entrepreneurial life consists of a large number of decisions between various alternatives. According to existing knowledge, the entrepreneur either decides to choose an alternative he is familiar with (and that proved to be successful), or to take a new direction. Based on the decision outcome the entrepreneurial knowledge is being updated.
Morris, Kuratko, Schindehutte and Spivack	2012	US, US, US, US	Entrepreneurship Theory and Practice			3	Conceptual		Entrepreneurial learning builds up a cumulative stock of experience. When people are asked how much entrepreneurial experience they have, they are being asked to add up the various temporal streams of experience of which they have been a part.

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Mueller and Shepherd	2016	US, US	Entrepreneurship Theory and Practice	1	2		Empirical (mixed)	114 entrepreneurs; mainly high-tech industry [Country: USA]	Failure is linked to a specific type of thinking - structural alignment. Structural alignment involves cognitive processes of comparison between items or ideas that results in useful implications. It thus can foster learning - especially (as discussed in the current study) about better opportunity recognition. While the main effect between failure experience and the use of structural alignment processes was not significant, this study found that when coupled with the proper cognitive tools (expert opportunity prototypes, cognitive style), failure experience can be beneficial in the long run, helping to equip individuals for success in subsequent ventures (at least in the identification of opportunities).
Nielsen and Sarasvathy	2016	DK, US	Academy of Management Discoveries			3	Empirical (quantitative)	1.418 restarters and 39.841 one-time entrepreneurs	Learning from exit is possible, however not automatic. It requires in particular a stock of knowledge - thus highly educated entrepreneurs can learn from exit. On the other side, entrepreneurs who see business failure per se as a rich source for learning might fail due to overconfidence bias.
Paik	2014	US	Strategic Entrepreneurship Journal			3	Empirical (quantitative)	172 firms in semi-conductor industry [Country: USA]	Serial entrepreneurs perform - regardless of their prior venture experience being a success or failure - better than novice entrepreneurs are.
Parker	2013	CA	Journal of Business Venturing			3	Empirical (quantitative)	707 entrepreneurs of whom 226 experienced two or more times of self-employment [Country: USA]	Based on an investigation of performance trajectories of serial entrepreneurs the authors find that learning from exit does exist. However, according to human capital theory, this positive influence depreciates over time limiting the possibility of "cumulative learning".
Pittaway and Thorpe	2012	US, UK	Entrepreneurship & Regional Development	1	2		Conceptual		Review and evaluation of the contribution to entrepreneurial learning by Jason Cope. Divided into three sub-chapters the authors describe Cope's research summarizing it into a conceptual framework.
Politis	2005	SE	Entrepreneurship Theory and Practice	1	2		Conceptual		Learning is a process that transforms various kinds of an entrepreneur's career experience (start-up/management/industry related) into entrepreneurial knowledge. This knowledge can lead either to improved opportunity recognition or to superior coping with the liabilities of newness. The extent to which each form of knowledge is created is influenced by the way of transformation. This can either be via exploitation, meaning that the entrepreneur acts according to his/her existing knowledge or 2) exploration, a process of going new paths. The actual way of transformation is influenced by the outcomes of previous events, predominant logic or reasoning and the entrepreneur's career orientation.
Politis and Gabriellson	2009	SE, SE	International Journal of Entrepreneurial Behavior & Research	1			Empirical (quantitative)	231 entrepreneurs who reengaged in entrepreneurial activities [Country: Sweden]	Prior critical experience in terms of founding and closing businesses positively impacts the attitude towards business failure.

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Rerup	2005	CA	Scandinavian Journal of Management			3	Conceptual		Rerup focuses on the transformation of learning to a useful factor of success for a new venture. Drawing on mindfulness, he explains that in situations with high similarity between two ventures and low level of change, extended levels of (costly) mindfulness might be suboptimal. Thus, mindfulness is an important factor, however not only positive and thus shall be used in situations of dynamic, ill-structured, ambiguous and unpredictable entrepreneurial circumstances.
Rocha, Carneiro and Varum	2015	DK, PT, PT	International Journal of Industrial Organization			3	Empirical (quantitative)	35.202 serial entrepreneurs out of a total sample of 219.462 ex business owners aged between 16 and 50 [Country: Portugal]	Serial entrepreneurs show higher performance in their second attempt. However, this is not a result of learning from previous experience but a self-selection bias.
Shepherd	2003	US	Academy of Management Review	1			Conceptual		Business failure typically leads to person-related levels of grief. Grief is a negative emotion that can distract the entrepreneur from objective reflection of the business failure. Thus, Shepherd suggests oscillating between focusing the healing from the negative emotion (restoration orientation) and focusing the failure and its causes (loss orientation) as the best way towards learning.
Singh, Corner and Pavlovich	2015	NZ, NZ, NZ	Journal of Business Venturing			3	Empirical (qualitative)	12 failed entrepreneurs [Country: New Zealand]	Stigma as a negative emotion accompanying venture failure ends when the failed entrepreneur experiences a so-called epiphany, a moment of insight. From this moment, he sees failure as a something positive and is ready to make use of learning outcomes - either in form of entrepreneurial reengagement or alternative applications (e.g. consultancy).
Singh, Corner and Pavlovich	2007	NZ, NZ, NZ	Journal of Management & Organization	1	2		Empirical (qualitative)	5 ex-entrepreneurs who experienced failure [Country: New Zealand]	According to a qualitative study, business failures leads to economic, social, psychological and physiological learning outcomes.
Stam, Audretsch, Meijaard	2008	NL, DE, US	Journal of Evolutionary Economics			3	Empirical (quantitative)	240 entrepreneurs who closed their business [Country: The Netherlands]	One visible outcome of learning is the fact that even in case of failure people reengage in entrepreneurial activity. Unless they believed in learning - out of the perspective of homo oeconomicus - there would be no reason to restart.
Toft-Kehler, Wennberg and Kim	2014	DK, SE, US	Journal of Business Venturing			3	Empirical (quantitative)	65.390 re-engaged entrepreneurs [Sweden]	Due to wrong contextualization and understanding of lessons learnt, entrepreneurs with little to moderate experience may be confronted with worse performance in a subsequent venture. However, expert entrepreneurs can transfer their learning correctly to new situations and thus profit from improved performance. This non-linear experience-performance relationship is moderated by contextual factors, i.e. industry, geographic and temporal similarity.
Ucbasaran, Shepherd, Lockett and Lyon	2013	UK, US, UK, UK	Journal of Management	1			Conceptual		Failure triggers sensemaking, a process consisting of interrelated stages of Scanning, Interpretation and Learning. This process is influenced by Attributions and Emotions. The outcome may be a change in behavior.

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Ucbasaran, Westhead and Wright	2011	UK, UK, UK	Harvard Business Review	1			Empirical (quantitative)	576 serial-/portfolio entrepreneurs [Country: UK]	Serial entrepreneurs do not reflect on failures and thus do not learn from one attempt to the next. The reasons are overconfidence and wrong attribution. In fact, serial entrepreneurs (different to portfolio entrepreneurs) - potentially as a coping mechanism - attribute the causes of failures to external factors.
Ucbasaran, Westhead, Wright and Flores	2010	UK, UK, UK, UK	Journal of Business Venturing	1			Empirical (quantitative)	576 entrepreneurs (278 novice and 298 repeat entrepreneurs) [Country: United Kingdom]	Over-optimism is a specific trait of entrepreneurs and at the same time an important antecedent to failure. While portfolio entrepreneurs - through experience - become more realistic (decreasing the tendency of being over-optimistic), this is not true for serial entrepreneurs.
Walsh and Cunningham	2017	ES, UK	International Journal of Entrepreneurial Behavior & Research	1	2		Empirical (qualitative)	30 entrepreneurs from ICT industry, who reentered in entrepreneurship after failure [Country: Ireland]	The attribution to business failure influences the entrepreneur's response and subsequently the learning focus.
Yamakawa and Cardon	2015	US, US	Small Business Economics	1		3	Empirical (quantitative)	220 entrepreneurs who previously failed and reentered into self-employment [Country: Japan]	Failure ascriptions (how the core causal characteristics of a failure are identified) influence perceived learning from failure. In fact, internal unstable failure ascriptions lead to higher perceived learning whereas external stable ascriptions deteriorate learning potential. Further, in case of internal unstable ascriptions a short time between failure and restart positively influences perceived learning. In case of external ascriptions, domain abandonment further lowers perceived learning from failure in new venture.
Yamakawa, Peng and Deeds	2015	US, US, US	Entrepreneurship Theory and Practice	1		3	Empirical (quantitative)	203 entrepreneurs who experienced business failure [Country: Japan]	Failure does not automatically lead to learning and thus superior venture performance in the future. In fact, to promote learning, internal attribution of failure is necessary. However, too high levels of internal attributions may lead to a sense of shame and guilt preventing the entrepreneur from reengaging into entrepreneurial activities. Further, the extent of failure experiences may have an inverted u-relationship with learning: in general, failure is seen to be a valuable basis for learning to take place but from a certain level, factors like negative emotions may limit learning.