THESIS OF THE DOCTORAL (PhD) DISSERTATION

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2019

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SOCIAL ASPECTS OF ENTREPRENEURIAL FAILURE

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2019

DOI: 10.17166/KE2020.001

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Whilst registered as a candidate for the above degree, I have not been registered for any other research award. The results and conclusions embodied in this dissertation are the work of the named candidate and have not been submitted for any other academic award.

Ilka Heinze

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Abstract

Although research on entrepreneurial failure and learning from crucial life events has gained much interest in the last decade, it is still in its infancy. Hence, the purpose of this research is to fill part of this gap by broaden our understanding on how entrepreneurs conceptualize their learning experience in their sense-making in the aftermath of failure. Furthermore, insights gained from the narratives are utilized to define archetypes of failure learning behaviour.

Due to the nascent field of knowledge, a mixed-method approach was conducted, the methods utilised were a combination of qualitative, hybrid and quantitative methods. First, for an interpretative phenomenological analysis (IPA), data was collected via fourteen semi-structured in-depth interviews with entrepreneurs who experienced failure previously. Major findings from the IPA study were: the predominant attribution of failure being a genuine learning experience, the unconsciousness of unlearning and the exploration of interrelations between higher-order learning orientation and narratives of abstract conceptualization. Next, a Q-Methodology study with twenty-eight entrepreneurship students and nascent entrepreneurs was undertaken. A Q-set of 60 statements was rank-ordered in order to distinguish failure learning behaviour. The factor analysis yielded four different groups of failure learning behaviour, labelled reflective creator, intuitive analyst, expressive realist, and growth-oriented pragmatist. Additionally, to improve and to interpret the quantitative factor extraction results, the four archetypes were analysed under consideration of qualitative aspects. For a final quantitative analysis, participants' personal behaviour in social interactions was additionally assessed by application of the Social Style Inventory. Statistical calculations resulted

in a presentation of weak, statistically insignificant associations. The main research limitations are closely connected to the chosen research design and methodology. Moreover, due to the nascent field of research, additional research might be necessary to further validate the research findings in general and the proposed framework in particular. These shortcomings are intended to motivate future research on the topic.

The present research not only addresses an existing gap in the academic discussion but contributes also to practical knowledge with the focus on improvement of entrepreneurship education on the topic of learning from failure. The major contribution of this research and a large part of its originality forms a framework to better understand differences in failure learning behaviour.

Key words: *entrepreneurial failure, failure learning, failure learning archetypes, interpretative phenomenological analysis, Q-methodology, social styles, versatility*

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AI	Artificial Intelligence
CEO	Chief Executive Officer
EI	Emotional Intelligence
EQ	Emotional Quotient
EL	Entrepreneurial Learning
GEM	Global Entrepreneurship Monitor
ILS	Felder-Soloman Index of Learning Styles©
IPA	Interpretative Phenomenological Analysis
IT	Information Technology
KfW	Kreditanstalt für Wiederaufbau
LSI	Learning Style Inventory
MBTI	Myers-Briggs Type Indicator
META	Measure of Entrepreneurial Tendencies and Abilities
PCA	Principal Component Analysis
PFI	Perceived Failure Intolerance
PhD	Doctor of Philosophy
SES	Socio-Economic Status
SME	Small and Medium Sized Enterprise
SREI	Self-Report Emotional Intelligence Questionnaire

SSP-E	Social Style Profile – Enhanced
TEIQue	Trait Emotional Intelligence Questionnaire
USA	United States of America

1 Research background and objectives

"Tomorrow's illiterate will not be the man who can't read; he will be the man who has not learned how to learn." (Toffler, 1984, p. 414). The short citation sums up Toffler's understanding of a powershift at the edge of the 21st century, based on a "power trinity" of knowledge, wealth and force (Toffler, 1990). Here, knowledge has to be understood as the main source of power, considering the societal development of a knowledge or learning economy with learning, unlearning and relearning activities at its core (Toffler, 1990; Smith, 2002). Starting in the early 2000's, intensive research was performed to examine entrepreneurial learning as a new and promising field of research at the interface between the concepts of organisational learning and entrepreneurship (Wang & Chugh, 2014). As the authors state, "how learning takes place and when learning takes place is fundamental to our understanding of the entrepreneurial process" (p. 24). Nevertheless, there are still some under-researched areas, for example, how different learning types come into play in different entrepreneurial contexts, how entrepreneurial behaviours can be explained or how opportunities are discovered or created, requiring more qualitative, phenomenon-driven research (Wang & Chugh, 2014).

This PhD research wants to bring new insights in the foundation and development of entrepreneurial learning based on the individual of the entrepreneur. The research explores the phenomenon of entrepreneurial learning in the context of critical events such as business failure through a mixed-method approach.

The first chapter starts in section 1.1 with a rationale for the research, that will be followed by an introduction of specific aims and objectives of the

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PhD dissertation in section 1.2. The chapter then closes with an overview on the further organisation of the thesis of the PhD dissertation in section 1.3.

1.1 Rationale for research

In 2017, in Germany about 557,000 people decided to start their own business and therefore are now called "entrepreneurs". Although the total number of new entrepreneurs is decreasing, the quality of economically important start-ups is increasing as the proportion of opportunity and innovative entrepreneurs is on the rise (Metzger, 2018). As entrepreneurs are a source of competition, mature organizations feel the pressure to improve and strive for excellence. Hence, the effect strengthens the whole economy and makes it fit for the future (Metzger, 2016). Also, it is significant to promote entrepreneurship because of its role as a driver of economic growth (Podoynitsyna, Van der Bij, & Song, 2011). So, as entrepreneurship is crucial for a healthy development of economies, entrepreneurial research is crucial for understanding the benefiting and challenging factors which affect entrepreneurs and their decisions. Most entrepreneurial research focuses on issues linked to the start-up phase of new ventures. The impact of venture failure is less researched and often based on hearsay (Cope, 2010). A wide variety of research aims to study how success can be achieved. Failure is often seen as the opposite of success; therefore, strategies of failure avoidance are proposed as a by-product of success strategies. Thus, several publications propose that entrepreneurship research is biased towards successful individuals (Bouchikhi, 1993) and highlight the importance of failure research when stating "If no one studies failure, the fiction that no one failed survives" (Bower, 1990, p. 50). In over 40 years of research about entrepreneurship,

a considerable amount of theories has been developed by numerous – often accoladed – researchers. However, as Sarasvathy & Venkataraman (2011) state, in many cases these theories either got in contradiction to theories from other disciplines or have been challenging in regard of prevailing opinions. The authors offer some examples for their observations such as the evidence for (i. e. Collins, Moore, & Unwalla, 1964; McClelland, 1961) and against psychological traits in entrepreneurs (Baron, 1998; Busenitz & Barney, 1997; Nicholls-Nixon, Cooper, & Woo, 2000; Palich & Bagby, 1995; S. A. Shane, 2003; S. Shane & Venkataraman, 2000) and argue that entrepreneurship may be best researched not under the umbrella of other disciplines such as economics or management, but rather to "recast it as a social force" (Sarasvathy & Venkataraman, 2011, p. 114). For that purpose, they pose a series of questions aiming to move toward a new view of entrepreneurship, resulting in an argument that entrepreneurship as a method has to focus on the inter-subjective as a key unit of analysis, as well as on heterogeneity, lability and contextuality of entrepreneurs. Furthermore, more clarification of what exactly constitutes the phenomenon of entrepreneurship is needed (Wiklund, Davidsson, & Audretsch, 2011). Additionally, Shepherd (2015) calls for more research in regard to entrepreneurship "to establish a richer, more comprehensive understanding of entrepreneurial phenomena" (p. 503) undertaken by researchers who ask new questions and therefore either apply new research methods or combinate methods in a new way.

Although Mantere, Aula, Schildt, & Vaara (2013) state that "failure and entrepreneurship are natural siblings" (p. 460) and a catharsis for the failure experience (see also i. e. Amankwah-Amoah, Boso, & Antwi-Agyei, 2018; Cope, 2011; Minniti & Bygrave, 2001; Shepherd, Williams,

Wolfe, & Patzelt, 2016; Singh, Corner, & Pavlovich, 2015; Walsh & Cunningham, 2016; Wdowiak, Schwarz, Lattacher, & Parastuty, 2017), the majority of entrepreneurial research focuses on issues of the start-up phase of new ventures. The impact of venture failure is still less researched and often based on hearsay (Cope, 2011). A wide variety of research aims to study how success can be achieved; failure is discussed as something that has to be avoided in order to achieve success. More recently, some scholars discussed constructs and perspectives of entrepreneurial fear of failure and did highlight the importance of the interaction with the aspirations of the future entrepreneur (Cacciotti, Hayton, Mitchell, & Giazitzoglu, 2016; Jenkins, Wiklund, & Brundin, 2014; J. Morgan & Sisak, 2016). Research on venture failure yields a manifold of empirical evidence that "learning from failure" is one of the few positive outcomes of failure (see i. e. Cope, 2011; Shephard, Williams, Wolfe, & Patzelt, 2016).

Hence, to broaden our understanding of the entrepreneurial process and the entrepreneur as an individual, many aspects of the phenomenon can be addressed by exploring failure learning as an integral element of entrepreneurial learning. Shane & Venkataraman (2000) started a line of inquiry of an entrepreneur's cognitive properties and his ability to identify, develop, and exploit opportunities, leading Corbett (2005) to the conclusion that it needs to be strengthened by studying in detail the process of learning. He argues that cognitive mechanisms such as overconfidence or counterfactual thinking and existing knowledge are not the same as learning, as they are rather static, whereas learning is a social process creating knowledge through the transformation of experience (Kolb, 1984). Cope (2005) proposes a dynamic learning perspective as a valuable and distinctive perspective of entrepreneurship covering not only the start-up phase

of a new venture. As entrepreneurial learning is characterised by concepts of metamorphosis, discontinuity and change, critical learning events are seen as significant experiences through which the relationship between reflection, learning and action can be discovered. Hence, the concept of "generative learning" (Gibb, 1997; Senge, 1990), being both retrospective and prospective, an interaction between past and future that can be distinguished in adaptive and proactive learning behaviour, should be used to explore how entrepreneurs transform and apply learning from critical events such as business failure to future entrepreneurial activities. In his conceptional paper, Cope (2005) additionally states that the application of learning may take place long after the learning experience itself and furthermore draws attention to the necessity for exploring the social, affective and emotional dimensions of learning in the aftermath of critical events.

To summarize, although an increasing body of research in regard to entrepreneurial learning has been published in the last decade, there is still a paucity of research focussing on why, when and how entrepreneurs learn from critical events such as business failure. On reason for the research gap can be addressed to the complexity of the phenomenon of entrepreneurial failure learning, combining the three distinct and sometimes contradicting constructs of entrepreneurship, critical life events and learning behaviour. In order to develop a nuanced understanding, triangulation based on a multi-study, mixed method research approach seems to be required.

1.2 Research aims and objectives

Although the importance of entrepreneurship is broadly agreed and based on sound evidence, the research of entrepreneurial learning after business

failure is still under-researched. Many of the recent studies focus on the positive aspects of failure. Failure is often acclaimed as an important learning experience; however, learning may not happen at all as failures are either likely to reinforce core beliefs or are attributed to external causes and unlearning of certain beliefs may be a necessary condition. To further understand the process of sense-making and its influence on learning in the aftermath of failure calls for a closer look at the causes and effects triggered by the entrepreneurs' understanding of themselves and their preferred coping strategies. In response, I propose an alternative approach to examine the manifold aspects of business failure and the effects on learning in the aftermath of failure. The aim of the research project is to investigate the current state of the failure learning process and herewith to contribute to theory development by establishing which learning strategies are applied after venture failure.

The aim of the research project is to answer the question: Which strategies do entrepreneurs apply to learn from their failure experiences and are these strategies related to their personal behavioural style? The research objectives can be summarized as follows:

(1) To identify narratives told by failed entrepreneurs to make sense of the failure experience;
(2) To understand the role of learning strategies for the sense-making process;
(3) To discover unlearning strategies applied to overcome unsuccessful behaviour;
(4) To develop a typology of failure learning strategies;
(5) To discover relationships between failure learning strategies and social styles.

What makes this research especially interesting is the mixed method approach that was chosen due to the complex nature of the phenomenon and the need for triangulation of research results. For that purpose, a three-step research process has been developed, starting with a qualitative design utilized by interpretative phenomenological analysis (IPA) to gain a general understanding of the sense-making of entrepreneurs who have experienced venture failure in Germany. The second study is informed by the analysis of the first study and applies Q-methodology, a research technique with the purpose of a systematic study of subjectivity (Stephenson, 1953). Here, the aim is to reveal existent pattern in regard to failure learning behaviours. Finally, the third study is a quantitative one, addressing associations between failure learning behaviour and social behaviour based on the TRACOM Social Styles model.

The findings from the investigation will lead to the formulation of propositions how to support failure learning under consideration of different learning and behavioural preferences. Paying attention to the narratives of those who experienced business failure and provide awareness about the effects and influence of social styles may offer beneficial insights for several stakeholders. So, it can be crucial for new and budding entrepreneurs to understand their personal frame of reference and pattern in their preferred coping strategies to ensure an informed and deliberate decision-making. For entrepreneurship educators as well as government agencies and business consultants who are engaged in advising start-up enterprises the study can offer insights into the social aspects of entrepreneurial decision-making and hence support the development of individually adaptable crisis or failure strategies. The academic research community can benefit from a further mixed-method approach that aims to close a gap between the management-focused and the personality-based studies by developing

a framework that is based on pillars from both areas: on a person-centred interpretation of the entrepreneurs' understanding of business failure and on a practice-proven and established model of social styles.

1.3 Structure of the thesis of the dissertation

Following the research background, as well as research aims and objectives in chapter 1, chapter 2 will present a short literature review entrepreneurial learning from venture failure, that being an excerpt from the systematic and comprehensive review of the literature on entrepreneurship, entrepreneurial learning, entrepreneurial failure, learning from failure and entrepreneurship education provided in the dissertation.

Chapter 3 contains the research methodology applied in this thesis. It explains the research methods that have been used to generate own data sets. Since the investigation is based on a mixed-methods approach, the chapter contains a detailed explanation about why the respective methods have been chosen, how they have been applied and how data quality is ensured.

Thereafter, chapter 4 presents the primary results of the investigations conducted by the qualitative and quantitative studies. It is structured alongside the units of analysis developed for the application of the mixed-method approach.

Chapter 5 provides a conclusion based on the discussion of research findings presented in the previous chapter. Furthermore, the chapter also highlights the limitations of the present research and features indications for future research.

2 Materials: The literature review

The literature review utilized for the dissertation analyses literature on selected aspects of learning from entrepreneurial failure which will form the basis to a comprehensive approach to the topic. The objectives are as follows: (1) to identify and to discuss research issues that are fundamental to the research topic; (2) to present and critically investigate prior inquiries and to demonstrate how this research relates to the existing body of knowledge; (3) to identify gaps in the current body of knowledge. Although this dissertation focuses on German entrepreneurs, mainly international literature was reviewed. Although historically, prominent German and German-speaking scholars such as Marx (1818 - 1883), Schmoller (1838 - 1917), Sombart (1863 - 1941), Weber (1864 - 1920), Schumpeter (1883 - 1950) and von Hayek (1899 - 1992) contributed vastly to the early entrepreneurship research, during most parts of the twentieth century, entrepreneurship research in Germany was non-existent (Schmude, Welter, & Heumann, 2008). Only at the beginning of the 20th century, the topic of new firm formation gradually became new relevance and a formal institutionalization of research did start in Germany (Schmude et al., 2008). Until today, German entrepreneurship research is still adolescent, and academic dissemination often takes place through conference proceedings, edited volumes, and special journal issues. Furthermore, publications in English are increasingly common only for the last decade, an additional reason why German entrepreneurship research long suffered from inadequate exchange with the international community (Schmude et al., 2008). However, another reason for the international perspective of the present literature review is the desire to approach the field of entrepreneurship as a phenomenon rather than in terms of context, which is

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said to be the predominant European perspective (Welter & Lasch, 2008; Wiklund et al., 2011).

2.1 Entrepreneurial Failure

An additional stream of literature that is relevant for this dissertation is about business failure. As there are many different definitions applied by scholars in this field, the choice of how to define the phenomenon has important implications for the research. In general, there is a range from very broad definitions such as discontinuity of ownership in general (also including reasons such as retirement or new business interests) to very narrow definitions such as bankruptcy. Additionally, the effects of business failure can either be looked at from strategy and evolutionary perspectives or from the complementing entrepreneur's perspective. (Ucbasaran, Shepherd, Lockett, & Lyon, 2013). For the purpose of this PhD dissertation, business failure is defined as "the termination of a business that has fallen short of its goals" (Cope, 2011, p. 605), that is compliant with the perspective on primarily psychological and social costs of failure (Ucbasaran et al., 2013). Also, as the research interest emphases the entrepreneur's perspective on business failure, the term "entrepreneurial failure" will be applied, which is in line with an interest to take a more integrated view of both success achievement and failure avoidance (McGrath, 1999).

In their systematic literature review, Ucbasaran et al. (2013) review research on what happens after business failure and classify their findings in the categories of financial, social, and psychological costs of failure as well as the interrelations of these costs. Additionally, Kücher & Feldbauer-Durstmüller (2019) argue that in recent years, the consequences of failures for entrepreneurs and perceptions took a dominance in the

research, with a focus on (1) costs of failure (Ucbasaran et al., 2013); as well as (2) perceptions and attributions of failure; (3) sense-making of and learning from failure. The authors further discuss two additional consequences of failure, (4) stigmatization and fair of failure, and (5) entrepreneur-friendly policies; the two latter issues both characterized as having a reciprocal effect on entrepreneurial failure. Relevant literature will be discussed in the following sub-sections.

Costs of failure

Costs of failure are typically categorized in financial, social and psychological costs and there are evidently many interrelations between these types of costs (Kücher & Feldbauer-Durstmüller, 2019; Ucbasaran et al., 2013). As recent research often addresses more than one of the cost types (and/or its interrelations) the papers discussed in this sub-section are presented based upon shared concepts and not particularly by differentiation of cost type.

In an earlier work, Shepherd (2003) proposes that a dual process of recovery from grief after entrepreneurial failure, consisting of both loss orientation and restoration orientation, is likely to allow for a quicker recovery from grief as well as a more efficient processing of information about the failure. With this conception, he draws attention to the fact that negative emotions, such as grief, are rather a mixed blessing and suppression, as in an outright restoration orientation, might be ineffective in the longer term. Additionally to psychological costs such as grief, failure is experienced broadly in the entrepreneurial life across economic, social, and physiological aspects (Singh, Corner, Pavlovich, 2007), and research findings suggest that problem-focused coping occurs mostly in the economic aspect, whereas emotion-focused coping seems to be limited to the

physiological aspect. Another important finding here is that coping strategies for almost all costs of failure seem to be available except for grief and frustration. Hsu, Burmeister-Lamp, & Hong (2017) also take an interest in the concept of grief recovery and - drawing on theories of regulatory focus and psychological ownership (PO) - examine the grief levels of failed entrepreneurs. The authors found that individuals with stronger promotive PO felt less grief compared to individuals with higher preventative PO who did experience stronger feelings of grief.

Shepherd, Wiklund, & Haynie (2009) state that although delaying business failure can be financially costly but under some circumstances can help to decrease emotional costs and hence enhance overall recovery. Similarly, emotional and psychological functioning of entrepreneurs after venture failure has been researched by Corner, Singh, & Pavlovich (2017). Their study investigates entrepreneurial resilience in the context of failure, and results show that the majority of entrepreneurs show stable levels of resilient functioning, hence the authors challenge the assumption that recovery is required after venture failure, disagreeing with i. e. Cope (2011), Mantere et al. (2013), Shepherd (2003), (2009); Shepherd, Wiklund, & Haynie (2009), and Ucbasaran et al. (2013).

Perceptions and attributions

In their bibliometric study of the scientific field of organizational failure, Kücher & Feldbauer-Durstmüller (2019) address the increasing research interest in attributions and perceptions of entrepreneurs facing, experiencing or making sense of failure. One of the most cited work in that regard is Zacharakis, Meyer and DeCastro (1999), who studied entrepreneurial misperceptions and attribution bias that exist when evaluating failure. Findings are that even though entrepreneurs attribute own failure to inter-

nal factors mainly, others' failures are seen as manageable factors, a perspective which is also taken by Venture Capitalists. The authors state that such misperceptions may lead to a misapplication of entrepreneurial resources. Similarly, entrepreneurial failure attributions such as Catharsis, Hubris, Zeitgeist, Betrayal, Nemesis, Mechanistic and Fate, can be identified by analysis of narratives. Such failure attributions seem not to confirm attribution theory, as entrepreneurs do take personal responsibility for failure (Mantere et al., 2013).

Additionally, Hayward, Shepherd, & Griffin (2006) draw on hubris theory to explain ongoing new venture creation despite their high failure rates. Hubris is explained as the "dark side" of overconfidence, opposite to overconfidence in general, which may be benefiting for entrepreneurial behaviour. Founders with a high propensity to be overconfident may then deprive their business of resources and endanger success, in the worst case increasing the likelihood of venture failure.

To conclude, entrepreneurial perceptions and attributions are often misinterpretations of the reality and hence the idea that success promotes success may at any time turn into the opposite, then resulting in failure (Baumard & Starbuck, 2005). Also, success in terms of "small losses" in regard to short-term improvement and reliability are likely to endanger long-term survival and resilience (Sitkin, 1992).

Sense-making

As discussed in the previous section, attributions and perceptions about failure experiences affect the sense-making in the aftermath of failure, learning from failure and, subsequently, further entrepreneurial activity (Kücher & Feldbauer-Durstmüller, 2019; Ucbasaran et al., 2013). Entrepreneurial failure affects not only individuals and organizations, but also

the whole society and as such it is important to understand how we make sense of it (Cardon, Stevens, & Potter, 2011). As the sensemaking perspective has been found a way for entrepreneurship scholars to gain a broader knowledge of how business failure is processed and how can it be overcome, research in this field has gained attraction over the last decade (for a detailed review see Walsh & Cunningham, 2016). Literature most relevant for the PhD study is summarized in this sub-section.

Sense-making is defined by Gioia & Chittipeddi (1991) as being an interpretive process of the individual to make meaning of the events they did experience. Primary activities in the sense-making process are scanning (collecting information about the event), interpreting (in the context of frames of references and worldviews) and action, for example through learning from the event (Thomas, Clark, & Gioia, 1993). Sense-making is not only happening at the individual level, research shows that collective sensemaking can moderate the social roles and relationships among team members or other groups of individuals after crises (Weick, 1995; Weick, Sutcliffe, & Obstfeld, 2005).

Shepherd et al. (2016) show the interrelations between negative emotions, grief and sense-making, stating that on the one hand reduced negative emotions such as grief will moderate the individual's facility to make sense of failure but at the same time the ability of making sense of the event will reduce grief (Shepherd, 2009). Additionally, Shepherd et al. (2016) explain how narratives are applied as part of the sense-making process, aiming to develop plausible stories of the experience that can be applied to control future activities.

The importance of narratives as a strategy to make sense of the event of failure and stress experienced by that event has also been highlighted by

Sellerberg & Leppänen (2012). The authors used the extended stories of their participants, with their reflection on new roles detached from their former companies, on their relationships with other individuals from their former networks, and on an uncertain future to develop a typology on how failed entrepreneurs position themselves in relation to the market. Also, narrative sense-making of failure often means that entrepreneurs actively search for benefits from failure as these encouraging experiences support coping and coming to terms with the crisis event (Heinze, 2013).

Stigmatization and fear of failure

Sense-making and attributions of what causes failure also have an effect on stigmatization of failure and therefore are likely to affect entrepreneurial activity (Kücher & Feldbauer-Durstmüller, 2019). Stigmatization should be explained as a process developing over time, rather than a label, already starting before the failure event and hence contributing to demise of the business (Singh et al., 2015).

Stigmatization at the individual level has been researched by Cardon, Stevens, & Potter (2011), who found that failure has a large impact on the stigmatization of the entrepreneur, as well as on their view of themselves following failure. In a process of stigmatization, members of the society, judge entrepreneurial failure in regard to personal blameworthiness which finally leads to professional devaluation (Wiesenfeld, Wurthmann, & Hambrick, 2008). Additionally, negative reactions due to stigmatization at the organizational level can increase the probability of organizational death (Sutton & Callahan, 1987).

Social stigmatization of entrepreneurial failure is said to be more often experienced in Europe, compared to the United States of America, where it is rather seen as a learning opportunity and important element of the

entrepreneurial process (Cope, 2011; Kücher & Feldbauer-Durstmüller, 2019; Landier, 2005). This high level of stigmatization is likely to increase fear of failure (Vaillant & Lafuente, 2007), a concept which has also experienced much attracted attention in research on failure in the last decade ((Kücher & Feldbauer-Durstmüller, 2019). The importance of research on fear of failure as a temporary state that is commonly experienced by many people is also promoted by Cacciotti & Hayton (2015) and further discussed by Cacciotti et al. (2016) who state that the majority of empirical studies of fear in entrepreneurship (37 of 44) does address fear of failure, and hence the authors propose a socially situated conceptualization of fear of failure within entrepreneurship.

The interest in research on stigmatization and fear of failure often occurs in an attempt to increase re-entry decisions, as cultural and societal norms can hamper re-entry and failed entrepreneurs in countries with high stigma levels have a lower likelihood of re-entry (Simmons, Wiklund, & Levie, 2014). Walsh (2017) explores how entrepreneurs do avoid or overcome stigma to re-enter entrepreneurship: by detachment (from the firm), acknowledgement (of the failure) and deflection (of the stigma). Kollmann, Stöckmann, & Kensbock (2017) propose that fear of failure is a responsive avoidance motive and demonstrate that the perception of obstacles activates fear of failure, a disadvantage for opportunity evaluation and exploitation. A very recent study addresses regional and individual differences in perceived failure intolerance (PFI) as likely reason for fear for failure and stigmatization, results indicate that individuals with "entrepreneurial spirit" are unaffected by PFI (Stout & Annulis, 2019).

The short summary of recently published research on fear of failure shows some interesting results, however, in general, Cacciotti & Hayton

(2015) are still correct in their conclusion that the concept of entrepreneurial fear of failure is in need of a theoretical model with different variables such as emotions, cognitions, and environmental factors to increase the scientific development. A summary of landmark articles as well as recent research on entrepreneurial failure can be found in the full dissertation (table 7).

2.2 Learning from failure

Learning from failure should be explained as the cognitive capability to identify and exploit new opportunities based on new knowledge gained by drawing on previous failure experiences (Corbett, 2007). Previous research has suggested that reactions to failure and thus learning from failure will vary substantially (Cardon, Zietsma, Saparito, Matherne, & Davis, 2005; Jenkins et al., 2014; Ucbasaran et al., 2013), and studies are either focused on how failure ‘‘can encourage learning because the individual is more likely to conduct a postmortem to understand what led to the failure’’ (Ucbasaran et al., 2013, p. 183) or on how the entrepreneurs’ interpretation of failure through their sense making of the experience triggers learning (Heinze, 2013). Also, prior work shows that learning from failure is one of the ways “to minimize the downside costs of entrepreneurial action” (Shepherd et al., 2016, p. 273). However, there is still lack of understanding when and why learning is likely to happen and when and why not. Papers discussed in this section of the literature review have in common that they aim to shed light on factors either enhancing or impeding learning from entrepreneurial failure.

Shepherd et al. (2016) published a comprehensive work on the effects of emotions, cognition and actions in regarding to learning from failure. The authors draw attention to the importance of narratives of the failure event,

as understanding the failure is a process of emergence and sense-making. Obstacles of learning are manifold, negative emotions such as grief are managed differently, depending on several personal and contextual influences. Based on their research, the authors propose high self-esteem as a likely negative impact on learning, whereas self-passion may help to eliminate defensive mechanism impeding learning.

The following review only discusses more recent research and research highlighting aspects of learning from failure not already covered by the extensive collection and interpretation of research results contributed by Shepherd et al. (2016).

The compensating effects of failure as an important source for entrepreneurial learning and the emergence of emotions that may hinder learning are further researched by He Fang, Solomon, & Krogh (2018). The authors propose an inverted U-shaped relationship between failure velocity and learning behaviours, moderated by emotion regulation. Individual differences in abilities to learn from failure are also addressed by Liu, Li, Hao, & Zhang (2019), who propose that a narcissistic personality can create cognitive and motivational obstacles to learning, the impeding effects especially remarkable with higher social costs of failure.

Although Politis & Gabrielsson (2009) acknowledge the importance of the entrepreneur's perception of a failure event (Shepherd, 2003), they look for a deeper understanding of attitudes towards failure by application of experiential learning theory. The authors identify critical career experiences that positively affect entrepreneurs' attitude towards failure: (1) prior start up experience; and (2) business closure due to poor firm performance. Business closure for personal reasons, on the other hand, seems not have any positive effect on their failure learning. Also, Boso,

Adeleye, Donbesuur, & Gyensare (2018) find that failure experience alone does not have a direct effect on new venture performance; it is rather channelled through the entrepreneurs' ability to learn from previous failure experiences.

Recovery and re-emergence from failure is also addressed by Cope (2011), demonstrating in his research that entrepreneurs not only learn about themselves and the loss of their business, but additionally about how relationships and networks affect their sense-making in the aftermath of failure. Such social processes are sought by the failed entrepreneur to repair damage as they may lead to social affirmation and supporting rehabilitation.

Yamakawa & Cardon (2015) examine how failure ascriptions affect perceptions of learning, their findings are consistent with prior work, highlighting greater perceived learning in association with internal unstable failure ascriptions. Similarly, Walsh & Cunningham (2017) examine regenerative entrepreneurs' attributions for business failure. The authors propose four types of failure attributions that are internal individual level; external firm level; external market level; and hybrid attributions. With a primarily attribution to internal factors, the entrepreneurs experience a deep, personal learning about themselves. External attributions trigger a primarily behavioural response where learning is focussed on the business, relationships, and networks. Finally, hybrid attributions trigger largely cognitive responses and learning about management. Additionally, Yamakawa & Cardon (2015) also show that re-entering entrepreneurship more quickly after failure will enhance learning for entrepreneurs with internal unstable ascriptions of failure, which is inconsistent with prior work by Cope (2011) and Shepherd (2009).

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Similar to Cope (2011), Wdowiak et al. (2017) researched the learning perspective of venture failure by application of a phenomenological procedure based upon qualitative content analysis. Their results in regard to the dynamic nature of the learning experiences agree with prior work (Cope, 2011; Ucbasaran et al., 2013). Additionally, major findings in the fields of management are perceived learning of product development, securing of start-up capital and strategic management, including the importance of an exit strategy. On the other hand, learnings in the social field relate to a new preference for trustworthy partners.

Stambaugh & Mitchell (2018) take a different angle to research learning from failure by exploring the significance of learning before the event of failure. The authors propose that the creation of entrepreneurial expertise is related to the intensity of the endeavour of failure avoidance, and the clarity and rapidity of feedback received in that process.

As shown in this discussion, learning is a central entrepreneurial capacity, allowing to bounce back from failure, but there is significant heterogeneity in learning among entrepreneurs. In the full dissertation, table 8 provides an overview of the recent research in chronological order.

2.3 Summary of the literature review

In the various studies reviewed, different research methodologies were applied and different results and interpretations were drawn. All in all, the literature review has revealed that traditional theories of entrepreneurship are at their limits and the territory has to be newly delineated. So, a need to redefine entrepreneurship as a method of human problem solving is addressed by Wiklund et al. (2011) and Sarasvathy & Venkataraman (2011). A general call for a more interactive, activity-driven, cognitive, compassionate and prosocial research on entrepreneurship was put for-

ward by Shepherd (2015). The question of what is still to be researched about entrepreneurial motivation has been raised by Carsrud & Brännback (2011), who formulate a series of 13 questions, three of them are addressing motivations leading to avoid failure.

Shepherd & Patzelt (2017) state that although it is important to further explore uni-directional causal relationships, research has to be progressed to multiple causal relationships of the causes and consequences of failure. Ucbasaran et al. (2013) take a similar stance by requesting more research at the intersection of the different categories of business failure costs, and state that such research studies will require multidisciplinary and/or multi-level theory development as well as empirical testing. Additionally, Davidsson (2016) draws attention to the fact that failure of a new venture (the individual or firm level) could have positive effects on the economy at large (the macro level perspective), as involved parties will learn and in future are likely find better solutions that are only possible because of the initial "failure" (p. 12).

Furthermore, it is also clearly visible that only little is known about learning strategies of German entrepreneurs in the aftermath of failure experiences. In particular, it is not clear which methods and procedures are applied to ensure learning, to what extent unlearning is actively applied or whether any connection with behavioural or social styles is existent. Hence, additional research to examine relationships between cultural perceptions of failure, individual failure attributions, and subsequent behaviour seems to be needed (Cardon et al., 2011).

The present literature review was conducted with two purposes: firstly, to gain an insight into entrepreneurship in general, and entrepreneurial failure and learning from failure in particular; and secondly, to provide a val-

d basis for selecting the pertinent questions of entrepreneurial learning after failure for the present inquiry. The literature review revealed that learning from failure is a dynamic process that comprises learning about oneself, learning about the business, and learning about social relationships. Emotions, cognition, attitudes and attributions are essential factors that can either strengthen or impede learning from failure. However, many open questions still exist. For example, there is an acknowledged importance "to study the other side of the same coin - failure to progress on an important entrepreneurial task - for instance, by exploring the interrelationship between negative emotions and attentional scope, creativity, and social resources" (Shepherd, 2015, p. 497).

A research framework (see figure 1) that was developed on the basis of the literature review will form the foundation for the upcoming data collection and analysis. Through focusing on achieving the five research objectives explained in chapter 1.2, it is possible to answer the general research question "Which strategies do entrepreneurs apply to learn from their failure experiences and are these strategies related to their personal behavioural style?"

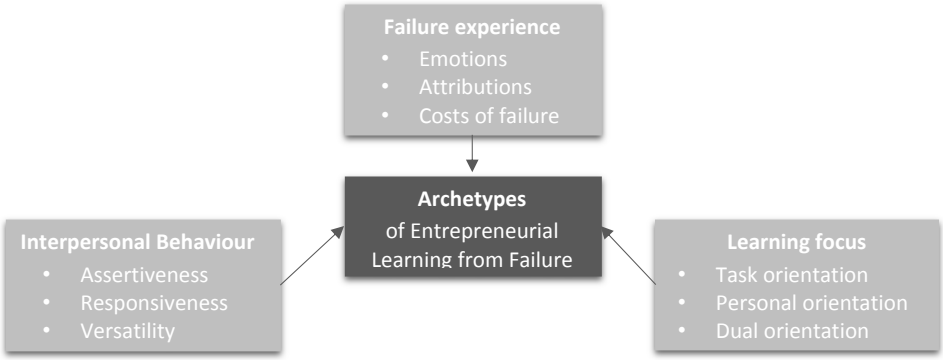

Figure 1 Research framework for entrepreneurial learning after failure

Although over the last decade, research interest in factors that will affect learning in the aftermath of entrepreneurial failure and entrepreneurial learning strategies has gathered momentum, no study is known that focuses on the existence of archetypes of failure learning based on interpersonal or social styles, learning preferences and the individual sense-making of the failure experience - no matter if it is in the German or international entrepreneurship context. The main aim of the present dissertation is to fill this gap. In regard to practical implications, the literature review has additionally shown, that learning from failure is an underrepresented content in entrepreneurial education (Fox, Pittaway, & Uzuegbunam, 2018; Kuratko & Morris, 2018). The following chapter 3 presents the underlying research methodology before chapters 4 and 5 analyse, interpret and discuss the research findings.

3 Methodology

This chapter explains and reflects upon the research strategy and design of this thesis of the dissertation to investigate the research objectives. The motives and justification for the research design are considered in a holistic manner which involves the underlying philosophy as well as the description of the methods. Therefore, the chapter starts in section 3.1 with the description of the underlying research paradigm and will be followed in section 3.2 by a short presentation of the research objectives. Section 3.3 introduces the strategy of the research, including the research methods, preparation of the data collection and sampling strategies, as well as the analysis process.

3.1 Research paradigm

According to Saunders, Lewis, & Thornill (2009), research paradigms can be defined "as the basic belief system or world view that guides the investigation" (p. 106) , and are characterized through their ontology (the researcher's view of the form and nature of reality), epistemology (the researcher's view in regard of what constitutes acceptable knowledge) and methodology (the researcher's strategy on how to find it out). According to Anderson & Starnawska (2008), the dominant paradigm of entrepreneurship research is positivism, a paradigm that on the one hand has been able to produce robust knowledge, on the other hand it rather creates a one-dimensional view and much of the idiosyncrasy is lost. Hence, the authors call for a complementary, interpretative approach that is capable of "presenting the big picture, the framework into which the pieces of the jigsaw fit" (p. 228). As highlighted before, the dissertation project intends to investigate the process of sense-making in the aftermath of entrepreneurial failure as well as to increase our understanding on how and

what individual entrepreneurs will learn from the failure event in regard to possible personal pattern of learning strategies. Hence, the research focusses on qualitative as well as quantitative aspects and addresses both observable phenomena and subjective meanings. To achieve the research aim and objectives, a research paradigm that mitigates the constraints imposed by the forced choice dichotomy between an interpretivism and a realism paradigm and which is open to a problem-oriented approach would suit best. Therefore, an epistemology was chosen that allows the researcher to look at phenomena from different perspectives and to provide an enriched understanding (Morgan, 2007). Pragmatism as a research paradigm offers to use a method that allows to adequately answer the research questions and to be flexible in investigative techniques as they attempt to address a range of research questions (Saunders et al., 2009; Feilzer, 2010). Knowledge of objectives or institutions within the pragmatism research paradigm arise in the practical relationship that the researcher has to these objects (Bryman & Bell, 2007). As shown in the following sections, this research uses a mixed method approach to conduct the research. It first puts the data derived through different methods alongside each other and discuss findings separately. The final step of analysis, however, aims to coalesce findings into a framework of failure learning archetypes. This would be a major advantage of the study, because - as stated by Feilzer (2010) - "most empirical mixed methods research has not been able to transcend the forced dichotomy of quantitative and qualitative data and methods" (p.9) and studies are still presented as "totally and largely independent of each other" (Bryman, 2007, p. 8).

3.2 Research objectives

In the following, the underlying research objectives and expectations will be presented. According to Popper (2002), all worthwhile research starts with problems followed by theories (proposed solutions), and criticism. This can be achieved by application of either a deductive or inductive procedure. Taking a deductive approach means to first develop a theoretical or conceptual framework, that is subsequently tested by application of research data. For the inductive approach, data is collected and explored to develop theories from them. In that case, although the research still has a clearly defined purpose with a research question and research objectives, no predetermined theories or conceptual frameworks are applied and hence no hypotheses or propositions are formulated in advance. As the overall aim of this inquiry is to develop an understanding of learning strategies applied by entrepreneurs after crucial failure experiences and whether these strategies are related to their personal behavioural style, an inductive approach has been applied for this study.

As already discussed in chapter 1.2, the five research objectives of the study are:

(1) To identify narratives told by failed entrepreneurs to make sense of the failure experience;
(2) To understand the role of learning strategies for the sense-making process;
(3) To discover unlearning strategies applied to overcome unsuccessful behaviour;
(4) To develop a typology of failure learning strategies and
(5) To discover relationships between failure learning strategies and social styles.

The scope and generalisability of the research objectives are not only limited to analytic methods but additionally include statistical methods as will be presented in the next chapter in more detail. The research questions are process-orientated and first investigate how something happens before raising the question of what happens. Research questions were subject to constant reflection and adaption, for example through pilot interviews and discussions with expert colleagues from the fields of entrepreneurship, psychology and entrepreneurship education.

3.3 Research strategy

As introduced in the previous section, this dissertation uses both qualitative and quantitative methods and aims to bring quantitative and qualitative findings together in the true sense of a mixed methods approach. Such an approach "has the potential to offer insights that could not otherwise be gleaned" (Bryman, 2007, p. 9). In regard to the research question, the findings may suggest interesting contrasts between the narratives and the statistical observations of the cases of failure learning or help to clarify each other. To achieve this and avoid barriers addressed by Bryman (2007) and Feilzer (2010), the study has been designed from the very first beginning in a way to recognize implications of the different rhythms of quantitative and qualitative investigations. This is substantiated by the fact that – according to Ucbasaran et al. (2013) – promising research on entrepreneurial learning from failure will require multidisciplinary or multilevel theorizing as well as empirical testing. Such a complex matter, again, requests a certain research philosophy such as pragmatism (see section 3.1) and a multi or mixed method study outline is recommended by Saunders et al. (2009). Najmaei (2016) argues that entrepreneurship research often is not able to capture the essence of its complexity and that

mixed methods designs based on the pragmatic paradigm are better suited than mono-method designs to explain complex phenomena in entrepreneurship. Another rationale for the application of a mixed method approach is the aim of triangulation, a process to use several methods or sources of data to double-check or confirm observations and to enhance the validity of the research findings (Bryman & Bell, 2007; Stokes, 2011). The following sections of this chapter are respectively organized in order to first highlight the methods applied under the umbrella of "mixed methods approach" in their own right and finally show how these methods are "genuinely integrated" and hence mutually illuminating the research topic (Bryman, 2007).

3.3.1 Research methods

The rationale for the application of a mixed methods approach was outlined in the previous section, in the following all three methods are discussed in the order of their application. Figure 2 provides an overview of the research approach and highlights the interplay of the applied methods.

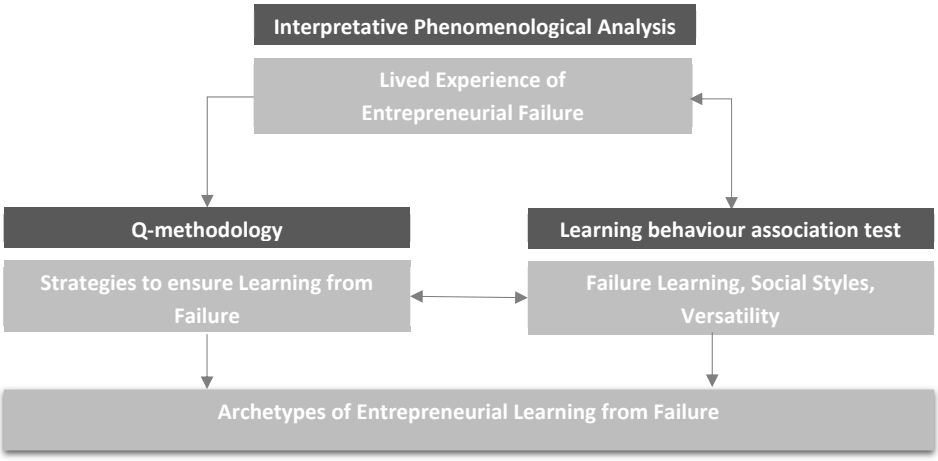

Figure 2 Mixed method research framework

The starting point is the study of the lived experience of entrepreneurial failure. To pay attention to the social embeddedness (expressed in the PhD study by the social style) of the individual failure experiences, a method that allows the researcher to take a more active role in studying the entrepreneurial practice a method seems to suit best for that purpose. In-depth, semi-structured interviews help the researcher to investigate the phenomenon through co-constructed narratives developed by the researcher and their inter-subjects (Drakopoulou Dodd, Pret, & Shaw, 2016). Data yielded in this first study will be analysed by application of an interpretative phenomenological approach and learning-specific information will be used to develop the concourse for the second study, where Q-methodology, a hybrid research technique, has been applied to understand strategies to learn from failure. Additionally, all participants in the first and second study have been asked to take part in an online assessment aiming to collect data for the third study, a quantitative test to discover associations between personal behaviour styles and learning strategies. All three research methods are explained in detail in the dissertation in subchapter 3.3.1.

3.3.2 Ensuring Data Quality

Data quality is an integral issue in qualitative research. Within the interview method, data quality is especially related to validity and reliability (Yin, 2008). Even though the term *validity* is often replaced in qualitative research by the term *trustworthiness*, given the association with the quantitative conceptualisation of the research process (Baxter & Jack, 2008; Leitch, Hill, & Harrison, 2009; Onwuegbuzie & Johnson, 2006), the term *validity* will still be used in this study. However, qualitative research will not be able to be used to make statistical generalisations about the entire

population (in the case of the dissertation project failed entrepreneurs) where this is based on a small and unrepresentative number of cases (Saunders et al., 2009).

Validity

An interview-based research complies with this criterion when the methods used are suitable for the aim of the research and allows answering properly the research questions. It has to be ensured that the factual investigation complies with the objectives of the research (Yin, 2008). Several strategies can be used to enhance construct validity of a research project. The researcher should submit interview content protocols as well as calculated ratios and interpretations of those to the interview participants for a formal sign-off (Schmittat, 2007). For IPA research, four principles to ensure quality and validity, originally are suggested: (1) sensitivity to context, (2) commitment and rigour, (3) transparency and coherence and, lastly, (4) impact and importance of the study itself (Smith et al., 2009; Yardley, 2008). For the PhD study, these principles have been wholly adapted by (1) the way how research participants have been approached, (2) attentiveness to the participants during data collection, the careful analysis of each single narrative recorded, transcribed and translated in the process, (3) the information about participant selection, construction of the interview schedule and steps of analysis provided in the write-up of the study, and (4) the aspiration to enhance our knowledge in regard to failure learning strategies and likely relationships with personal behaviour styles and emotional intelligence.

Reliability

Reliability within qualitative research means that other researchers would come to the same results by interpreting the data or that the re-

investigation of the cases would lead to the same results (Easterby-Smith, Thorpe, & Jackson, 2015). Yin (2008) introduces three principles to ensure reliability: (1) the usage of multiple sources of evidence, (2) the documentation and organisation of the collected data and (3) to maintain a chain of evidence. The first principle has been followed in this study by the combination of semi-structured interviews, and an extensive document and information analysis. The second and third principles are very similar to Yardley (2008) and are followed in ways described above. Furthermore, Aguinis & Solarino (2019) recommend 12 criteria to enhance transparency and ensure replicability in qualitative research designs. These criteria (see appendix 2) are additionally followed for this PhD study.

For the application of Q-methodology, validity and reliability are demonstrated by asking the study's participants to sort a set of statements all from the same viewpoint, primed by the researcher (Simon Watts & Stenner, 2012). For the purpose of the PhD study, the primed viewpoint has been formulated as follows: "Learning in the aftermath of failure means, that …".

The Social Styles Model has been statistically tested for its reliability and validity and results show reliability coefficients on all scales between 0.77 and 0.95, more details are to be found in the Social Style & Versatility Technical Report (Mulqueen, 2012). Furthermore, as the Social Styles inventory offers third party assessments, several problems of self-reports (Podsakoff & Organ, 1986) are largely avoided in this study.

Lastly, for the complete study, as the rationale of the application of a mixed method design is triangulation (see section 3.3), the elements of investigation or sub-methods further enhance validity (Miles et al., 2013).

Whereas outcomes from different elements of investigation converge towards a result, the importance and validity of such result has to be higher valued.

3.3.3 Data collection and sampling strategy

The focus of data collection for the whole study is mainly on primary data. In the case of the IPA study, secondary data such as media reports about the failure events have been additionally analysed, when available.

Concerning the time frame of data collection, in general, longitudinal and cross-sectional inquiries can be distinguished. Longitudinal studies are executed over long time periods in order to collect data on a continuous basis and to inquire changing patterns, whereas cross-sectional studies are characterized by several samples taken in snapshot mode (Saunders et al., 2009). As the present inquiry requires a wider range of samples and a higher depth of research for the explorative mission, this study is better examined with a cross-sectional approach. In the following, data collection and sampling strategies are explained for each of the methods applied in detail.

Interpretative Phenomenological Analysis

"Understanding experience is the very bread and butter of psychology" state Reid, Flowers and Larkin (2005, p. 20) and explain in which ways IPA provides the opportunity to learn from the perception of true experts: the research participants who were chosen because of their lived experience. For this study, all participants have to fall under the definition of "elite informants", illustrated by Aguinis & Solarino (2019) as "key decision makers who have extensive and exclusive information and the ability to influence important firm outcomes" (p. 3), in this case in regard to venture failure experience.

One of the critical factors in any IPA study lies in selecting the sample of participants. Smith et al. (2009) recommend small sample sizes, which usually consists of 4 to 10 interviews. They discuss that higher numbers are not a characteristic of better work, as "successful analysis requires time, reflection and dialogue" (p. 52). Furthermore, the authors recommend to find a homogeneous group and acknowledge that this will usually be partly a practical problem. According to Smith (2011b), the credibility and strength of IPA sample selection rests on theoretical generalisability. Cope (2011) states that an IPA researcher has to be pragmatic in choosing the sample, especially in cases with venture failure, as such research utilizes extraordinarily difficult-to-obtain data. However, as the sample has to be consistent with the qualitative paradigm of the research, a purposive sampling strategy has to be applied. For that, Smith et al. (2009) suggest different ways to contact potential participants, via own contacts, referrals from various gatekeepers or snowballing. All of these strategies have been applied for the purpose of this study, the targeted address took part in August and September 2018. Out of 59 targeted contacts, in total 15 entrepreneurs with the lived experience of business failure have agreed to take part in the study. All of these entrepreneurs have been firstly contacted by phone or e-mail to arrange a first short interview, solving general questions about their business, their failure experience and their interest in the study. Thereafter, individual arrangements for the second, semi-structured in-depth interview have been met. All interviews took part between end of September and mid of December 2018.

Q methodology

A Q-Methodology study includes five phases (1) development of the concourse, (2) development of the Q sample, (3) selection of the p set, (4) conduct of the Q sort and (5) analysis of data (Brown, 1980; Stone, Maguire, Kang, & Cha, 2016; Simon Watts & Stenner, 2012). The first four phases are illustrated in this section, the final phase – data analysis – will be subject to section 3.4.

For phase (1), development of the concourse, a set of statements that reflect the range of perceptions about the research topic has to be developed, either by application of primary or secondary data. Following the mixed method approach of the overall study, primary data gained during the IPA research was used for the concourse. The IPA interviews (carried out in autumn 2018) yielded a total of 164 free-response statements defining and describing entrepreneurial failure learning.

Next, for phase (2), a subset of statement is developed from the concourse through an iterative screening process. Consistent with recommendations in the literature (Shemmings & Ellingsen, 2012; Watts & Stenner, 2012) a subset of 60 of the statements were selected to define the Q sample. The development of this sample aims to represent discussions about specific topics that are presented in the language of the participants. Hence, the definition of the Q sample is seen as the most critical and demanding part (Shemmings & Ellingsen, 2012), as the researcher has to take care of the concourse's comprehensiveness (coverage of variety of viewpoints and avoidance of redundancies) as well as the manageability for the participants. Dzopia & Ahern (2011) report in their meta-review of Q-based research Q-sets ranging from 25 to 82 statements, whereas Watts & Stenner (2012), referring to Curt (1994) and Stainton Rogers (1995) state that

a range between 40 and 80 items "has become the house standard" (p. 61). Conforming to that, a subset of 60 statements has been selected to define the Q sample. In an iterative procedure, three researchers independently reduced the set and finally agreed upon the Q-sample of 60 statements (see appendix 5).

The selection the so called "P set", which comprises of the selected participants takes place in phase (3). As the choice of participants is again a very crucial aspect of the study design (Watts & Stenner, 2012), a strategic sampling was required to recruit a purposive sample of participants who can be expected to have firm and distinct viewpoints on the research topic (Brown, 1980). P-sets observed by Dzopia & Ahern (2011) range from 20 to 103 participants, however, relevant results can be obtained with far fewer (Watts & Stenner, 2005). Furthermore, McKeown & Thomas (2013) state that the number of participants should be kept to a minimum. Another requirement is the diversity in observable demographics, e.g. age, gender, social class, education, assuming an equivalent diversity in opinions (Watts & Stenner, 2012). Hence, 28 participants from two different university programs, one focussed on entrepreneurship education, the other on part-time students with working experience, and from the start up community have been selected to engage in the Q-sort. Descriptive characteristics of the sample are provided in the analysis section. Usually, the number of participants is smaller than the number of statements administered in the Q-sort (Brouwer, 1992) and often a ratio of 1:2 is seen as suggestable (Kline, 1994; Watts & Stenner, 2012). As Watts & Stenner (2012, p. 72) state, "…Q methodology has little interest in taking head counts or generalizing to a population of people".

Phase (4), the Q-sorts, took place in February and March 2019. Before starting the Q-sorting activity, participants were given instructions on the process of engaging in Q-sort techniques. They were presented with the open question: "For me, learning from failure means …" and were guided to sort their package of 60 statements in three piles: the first pile, placed on the right side of their table consists of statements that they mostly agree with; a second pile, placed on their left-hand side, with statements that they disagree with; and in a third pile in the middle of their desk a pile with statements they feel ambivalent about. Next, participants were asked to sort each of the piles in order to rank statements from most agreement to least agreement. For that purpose, a template that forces a quasi-normal distribution was used (see figure 3) and participants were instructed to start sorting from the right pile (agreement), thereafter turn to the left side (disagreement) and finally fill the middle section. Participants would rearrange cards until their Q-sort best represented their own viewpoints. It took the participants about 50 min to finish the sort, with some quicker sorts of about 35 min and some slower sorts of about 60 min. Results yielded a set of factors that can be claimed to represent shared ways of failure learning.

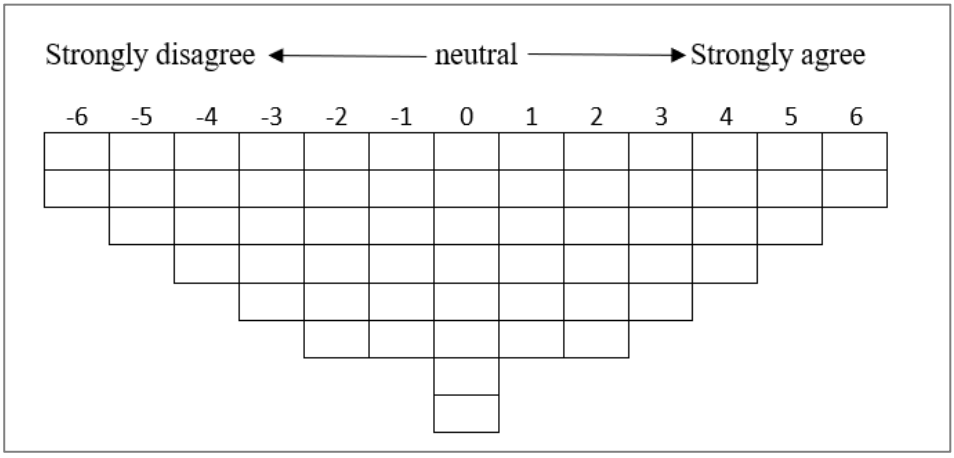

Figure 3 Q-sorting template

All sorting templates have been cross-checked by the researcher at the end of the sorting exercise and additionally personal insights and reflections provided by some of the participants have been collected in order to enhance the qualitative information for analysis of the data (see section 3.3.4).

Failure learning association tests

All 42 participants from the two previous studies have been invited to take part in the Social Styles Inventory. The inventory is based on an online assessment, consisting of two elements: the self-evaluation and an additional third-party evaluation. The statistical procedure for style and versatility estimations was provided by Tracom right after the submission of the online assessment (done by each single participant and their third-party feedback providers). Reports released to the researcher provide (1) the self-evaluation of social style, (2) the self-evaluation of versatility, (3) the third-party evaluation of social style and (4) the third-party evaluation of versatility. These reports are deployed by the researcher for further analysis (see section 3.3.4) and later (voluntary) discussion with the participants. Although social style inventory itself is a purely quantitative technique, the personal debriefs of participants in regard to their assessment results did provide the researcher with additional insights about the participants' personal values, worldviews and experiences, which again increased the researcher's ability to carry out the interpretative phenomenological analysis relevant for the first study. Additionally, the data gained by the personal debriefs support the formulation of the learning archetypes developed by application of the Q-methodology.

3.3.4 Data analysis

As the study applies a mixed method design, data will be analysed using both quantitative and qualitative techniques. The interview data and qualitative data collected via the Q-sorts will be analysed to search for key themes and patterns. Particular attention will be given to respondents' comments on perceived benefits of failure learning and strategies to unlearn unsuccessful behaviour. In addition, the subjective data from the Q-sorts will be quantified by application of the Q factor analysis. Finally, data from the Social Style questionnaire and the failure learning archetypes yielded by the Q methodology will be analysed using cross-tabulation and association tests (Bühl & Zöfel, 2002). Procedures of data analysis are illustrated next.

Interpretative Phenomenological Analysis

As a nascent approach to phenomenological research, IPA provides an accessible qualitative research method (Larkin & Thompson, 2012). The authors describe the outcome of a successful IPA study as bridging the elements of "giving voice" (to the participant's narrative and their reflection on the researcher) and of "making sense" (through the interpretation of the participant's account by using psychological concepts). Furthermore, the authors outline that finding the right balance between these key components requires substantial time and effort. That said, the method makes no claim to objectivity, rather it is emphatically inductive and idiographic. Therefore, the analysis starts with a thorough, detailed examination of one case, and thereafter moves to the careful analysis of subsequent cases (Cope, 2011; Smith et al., 2009). The extensive, thorough and rigorous procedure of analysis illustrated in table 10 in the dissertation should be convincing enough to show the ability of hermeneutic phenomenological studies to make meaningful theoretical contributions to entre-

preneurial research (Berglund, 2007; Conklin, 2010; Cope, 2011). The analysis has been based on transcriptions of the audio-recorded data from the interviews. In total, 14 interviews have been carried out and all of these interviews have been transcribed, using the services of a professional scientific transcription provider. The recordings in total consist of more than 15 hours interview time, with an average length of 64 min (ranging from 48 to 97 min) and resulted in 308 transcribed A4 pages which were taken into account for further analysis based on the process illustrated in table 10 of the full dissertation. The results of the analytical process are shown in the following chapter 4.

Q methodology

The study uses Q methodology to conduct a hybrid qualitative and quantitative exploration of failure learning. The general five-staged process of a Q methodology study has been illustrated already in section 3.3.3, this section highlights the procedures carried out in the fifth and final stage of the method.

Data from the 28 Q-sorts were entered in an Excel spreadsheet that was imported into the R platform, a free software environment for statistical computing and graphics. Zabala (2014) developed the package *qmethod* that surpasses other existing, free-of-cost available Q software in many ways, especially by the step-by-step analysis that helps the researcher to fully understand the process.

For the statistical analysis, the Q set becomes the "subjects" and the individual Q-sorts (carried out by the participants, presenting their individual viewpoints) become the "variables" (Sinclair, 2019). That allows for a correlation of individual viewpoints that cluster together to similar opinions or standpoints. Factor extraction in the qmethod package applies a

Principal Component Analysis (PCA) and the extracted factors are varimax-rotated to produce the maximum differentiation. The selection of factors is done iteratively, using both the researchers' theoretically informed judgement and loadings that maximise both the number of statements that have significant loading onto the factors and number of participants accounting for the factor (Watts & Stenner, 2012). Findings of the statistical analysis are provided in chapter 4.

Failure learning association tests

Each of the 42 participant profiles consists of both self-assessment and third-party assessment of measures of social style and versatility (see subsection 3.3.3) which are based on the Social Style Profile – Enhanced (SSP-E). All statistical analyses were carried out by Tracom and reports provided by the service organisation have been used for cross-tabulation and descriptive statistical analyses with several association tests by application of the statistical software IBM SPSS Statistics 25. Results of the analyses are to be found in chapter 4. Furthermore, qualitative data collected during the individual participant debriefs are taken into account for the qualitative studies (see sub-section 3.3.3). These findings are selectively presented in the respective IPA and Q-Methodology finding section in chapter 4.

Compilation of the mixed method study

The aim of the study is to broaden our understanding about learning in the aftermath of entrepreneurial failure under consideration of behavioural pattern in social interactions. Based on the narratives of entrepreneurs about their lived experience of entrepreneurial failure and their sensemaking of the crucial life event, Q methodology, a hybrid research technique has been applied for qualitative and quantitative exploration of

learning from failure. Thereafter, statistical analyses were carried out to search for associations between failure learning opinion groups and behavioural pattern measured by the SSP-E questionnaire, the Social Style assessment instrument. The triangulation of both quantitative and qualitative data does not only allow for a deeper understanding of the participants' learning strategies, but additionally enhances the validity of the research findings (Bryman & Bell, 2007; Stokes, 2011). All findings will be presented in chapter 4 and further discussed in chapter 5. Figure 4 summarizes the compilation of the data analysis.

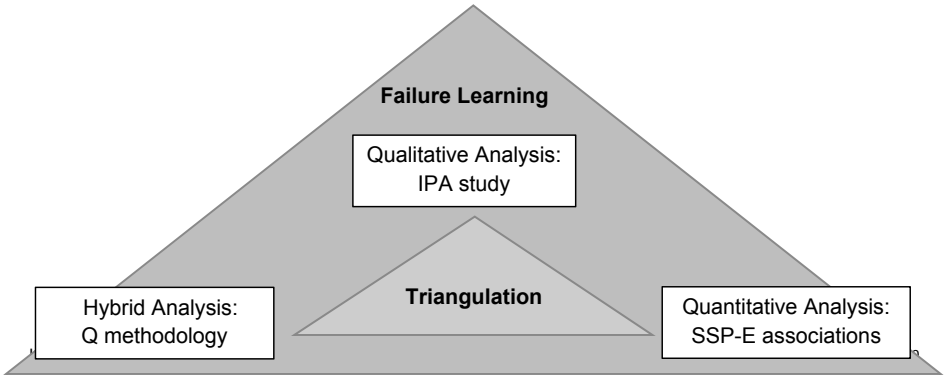

Figure 4 Compilation of the data analysis
Source: own illustration, based on Schönbohm & Jülich (2016)

4 Research findings

This chapter presents the results identified through the data analysis from the IPA interviews, the supporting document analysis, the Q-sorts and the calculation of the associations between learning strategies and behavioural pattern as described in the previous chapter. Structured alongside the units of analysis defined in chapter 3, the chapter provides answers to the five research questions (see sections 1.2 and 3.2 respectively). Section 4.1 illustrates an short overview of findings obtained from the interpretative phenomenological analysis, the approach requires working through multiple levels of constructing, de-constructing and clustering emergent themes. Section 4.2 presents the findings on the learning archetypes determined by the qualitative and quantitative analysis of the Q sorts. Section 4.3 introduces the outcomes of the quantitative analysis of learning archetypes in regard to their association with behavioural aspects such as social styles and versatility. The chapter is summarised in section 4.4.

4.1 Interpretative phenomenological analysis results

The research utilizes extraordinarily difficult-to-obtain data on the personal experience of entrepreneurial failure. In total, 14 semi-structured in-depth interviews were carried out between October and December 2018, resulting in more than 15 hours of audio-recorded data. All participants have been introduced to the research study in a pre-interview conversation and confirmed that they did experience entrepreneurial failure as defined in section 2.3: the exit of a venture as it has fallen short of its goals. However, as the analysis requires a homogeneous sample and cases included in one study should be limited for the purpose of attention to detail, a first pre-analysis was carried out to check for homogeneity. The analysis yielded four cases lacking the required homogeneity of the failure experi-

ence (details are provided in table 1). Therefore, these cases have been excluded from further interpretative phenomenological analysis and the sample was reduced to ten cases. However, as all these four participants stated their learnings from failure in detail and by application of good examples, the excluded cases offer valuable insights in regard to learning outcomes and learning strategies after a failure experience. Therefore, these cases have been content-analysed for the purpose of developing the Q-methodology concourse (see section 4.2) and for the evaluation of social style preferences (see section 4.3). The basic demographic data on all cases explored is illustrated in table 1. For the sake of anonymity, cases are labelled by number rather the alias name applied in the interpretative phenomenological analysis.

Table 1 Demographics for each interviewee

No	Failure type	Time of event (years)	No of employees*	Sector	Family business	Co-founder	Funding	Venture run (years)	Failure homogenety
EI1	team exit	< 1	4	Digital Economy	no	yes	new venture fund	< 2	no[1]
EI2	closing	1 - 2	2	Web Design	no	yes	private	2 - 5	yes
EI3	bankruptcy	> 10	210	Construction	yes	no	private	6 - 10	yes
EI4	closing	< 1	3	Digital Systems Engineering	no	yes	new venture fund	< 2	yes
EI5	bankruptcy	< 1	10	Retail	yes	no	private	6 - 10	yes
EI6	bankruptcy	> 10	10	Finance	yes	no	private	2 - 5	yes
EI7	closing	6 - 10	60	Public Transport	yes	no	private	> 10	yes

No	Failure type	Time of event (years)	No of em-ployees*	Sector	Family busi-ness	Co-foun-der	Funding	Venture run (years)	Failure homo-genety
EI8	n/a	-	2	Online Retail	no	yes	private	2 - 5	no[2]
EI9	n/a	-	50	Fleet Manage-ment	n/a	n/a	m/a	< 2	no[3]
EI10	other	-	0	Insurance	no	no	private	2 - 5	no[4]
EI11	closing	1 - 2	8	eLearning	no	yes	venture capital	2 - 5	yes
EI12	bank-ruptcy	2 - 5	4	Training & Consulting	no	no	private	2 - 5	yes
EI13	bank-ruptcy	1 - 2	21	Hospitality	no	yes	venture capital	2 - 5	yes
EI14	team exit	1 - 2	7	Biotech-nology	no	yes	new ven-ture fund	2 - 5	yes

* incl. founder, [1] lack of personal ownership, [2] venture is experiment, [3] employment failure, [4] identity crisis

Before illustrating the findings of the analysis in detail, an anonymised profile of all participants which have finally taken into account for the interpretative phenomenological analysis is provided next. The sample consists of ten entrepreneurs that were geographically spread throughout Germany.

Bjoern: is in his late 50-ies, and prior to founding his venture capital firm in 1997, he enjoyed a high-profile managerial career in the banking sector. He invested his private capital to set up a fund with the mission to raise venture capital to invest in technology start-ups in the New Market. Due to the burst of the dot.com bubble, he failed with a second round of financing and hence lost his money. After this failure, he started from the scratch, however, on a smaller scale and with no employees. Today, most of his investments are made in the United States of America, as Bjoern

feels the German capital market has not the right setting for the technologies supported by his venture capital.

Cornelia: holds a degree in IT and took over the family business, a lighting design store in a small town in Eastern Germany. Over the next decade, she branched out and opened stores in two larger cities and additionally started an online store. The decline of the business went over several years, Cornelia only making minor hesitant attempts to change the situation. However, in early 2018 Cornelia decided to take control again and initiated insolvency proceedings. At the time of the interview, she was still recovering from the experience. Now in her late thirties, she feels that the concept of "light" should be approached in a more holistic, and spiritual way. Today, in summer 2019, she not only runs a lighting design online shop but additionally follows a new concept to integrate her spiritual interests (light as the "warmness of the heart") in her entrepreneurial business.

Jakob: after a dual apprenticeship and some first professional experience, Jakob went to study Computer and Systems Engineering. As part of the practice-oriented degree program, he started – together with three fellow students – a project to develop smart house solutions. As the project results were very promising, he and one of the project members decided to start a venture to develop their idea to market introduction. They secured a one-year funding from a public start-up support fund and one further previous project member joined the founding team. However, within the first year, the market situation did completely change, as some large, well-known competitors joined the market and offered similar solutions. Jakob and his colleagues felt that they cannot compete in such an environment and decided to close down. Today, Jakob is aged 34 and in em-

ployment, however, he is in discussion with some start-up teams and considers a new entrepreneurial activity, as he feels within an employment, enthusiasm and challenges are lacking often.

Joseph: decided right from the beginning of his academic education to join an entrepreneurship program and after a short flying visit in key account management of a large international online company followed that track by starting his first business, an app-based learning transfer support service for individual training participants. Similar to Jakob, Joseph started together with two partners and got a first financing from a public start-up support fund. Subsequently, the team was able to secure orders from some of the largest and well-known German firms. However, after about 18 months Jakob realized that although there is a market for his solution, the cost-profit-ratio does not meet his expectations and he did realise that the business idea is not self-sustaining. As a result, he decided to close down the venture. He then worked as a consultant for some months and – now aged 35 – got an offer to work as an intrapreneur for one of Germany's largest domestic appliance manufacturers.

Karl: has been born into a family business, a regional public transport venture started by his father. However, after gaining a degree in Business Administration, Karl decided to join a larger family business for a career in management. About three years later, his father, now at retirement age, decided to close down the business, however, Karl took an interest and convinced his father to sell him the family business. He then run the venture for 13 years and additionally took an engagement as expert for the Federal Association for Economics, Transport and Logistics. Due to this engagement, he learned early of upcoming law and policy changes that will lead to dramatic changes for the whole sector, especially for SMEs.

As a result, he decided to wind up the business in an orderly way. Thereafter, he worked some months as a consultant to help other business that have been similarly affected by the new legislation and finally decided to re-join the large organisation, he started his career with. Today, he still feels that the closing down has been the correct decision in a rational sense, but the wrong decision in an emotional way, as – as he puts it by himself – "one time medium-sized enterprise, always medium-sized enterprise".

Keno: similar to Jakob, Keno started his first business still being a student, and together with a co-founder, a fellow student. They invested their own money in a web design studio and have been successfully booked and largely recommended by their costumers, most of them working in the creative sector. However, after about 18 months, his co-founder decided to withdraw, resulting in the close down of the business. Due to his strong need for freedom and autonomy, Keno is highly motivated to engage again in entrepreneurial activities. To recover from the grief resulting of the failure, he took an entrepreneurship class at a US-based university and thereafter participated in an entrepreneurship summer university at a Berlin-based university. He has some ideas for a new venture, which would be disruptive, however, is still looking for co-founders and ways to develop his idea further.

Luis: went into business with a co-founder he met during his business administration degree. The co-founder brought in her idea for rotation of plants to allow a horizontal façade greening. The young start-up won the first place in an idea competition sponsored by the Baden-Württemberg Business Development Agency. Similar to Jakob and Joseph, the co-founders got their first financing from a public start-up support fund and

later funding from science research fonds. Although the idea is innovative and there is clearly a market, each project takes long time and the start-up has to pre-finance large sums. Luis than did realise that there are some disagreements between him and his co-founder in regard to the management of the venture that could not be overcome. As a result, he decided to withdraw from the venture. Today, he is 35 and in employment, but still interested to engage in entrepreneurial activities, searching for an opportunity which „is interesting but at the same time has the potential to be monetarized" as he puts it himself.

Martin: holds a degree as civil engineer and founded a civil engineering firm right after the German re-unification in 1990. During that time there was a peak in construction work in Germany, however, after some first successful years where he re-invested all profit, the business went into a trough, and bankruptcy followed in 1998. Martin was hit hart, as he took individual liability and lost not only his business but all of his private assets. However, he started from the scratch and, now in his late 50-ies, again owns and manages a civil engineering business, albeit on a much smaller scale.

Rita: has been born into a German-Italian family and been raised in a multi-cultural setting. She went to Universities in Maastricht, Milan, Rotterdam and Vienna for bachelor and master degrees in Business Administration. Thereafter, she did spend about five years developing a professional career in finance and consulting. At that time, together with her best friend, she did realize "my bank account grows, my workload grows – and so does my body mass index". Dissatisfied with the two last facts, the two women together developed a business model for a healthy food restaurant chain. They resigned from their careers and founded their busi-

ness with venture capital. Although the first restaurant has been a success, further growth has been a challenge and one of the venture capitalists disengaged from the funding. The co-founders have not been able to secure new funding and hence had to open insolvency proceedings. Today, Rita – now in her mid-thirties – works as a freelance consultant and is pending to re-join entrepreneurship – she has "some irons in the fire".

Steffen: developed his career in the health care profession and after several employments decided to start a training and consulting business offering advice and training for small health care providers. However, due to a too rapid growth of the business and poor payment morale of his customers, he lost control over the finances and went into insolvency. After the failure, he went back into employment to get a chance to pay back his debts. However, he is still convinced about entrepreneurship being the right place to be for him and so he is distance-studying for a bachelor in Business Administrations and on the lookout for new entrepreneurial opportunities.

The following analytical data sections illustrate both the process of making sense of the failure and content dimensions of failure. As the aim is to explore the sense-making and learning outcomes of failure, a detailed consideration of causes and managerial strategies has taken place. The following sections are structured based on the process of sense-making (see figure 5), starting with the analysis of attributions and perceptions of the failure experience, then turning to explore the sense-making in terms of costs of failure and finally discuss what participants ultimately learned from the failure of their ventures. These sections represent an excerpt for the purpose of this thesis, the detailed results, analyses and interpretations are provided in the dissertation.

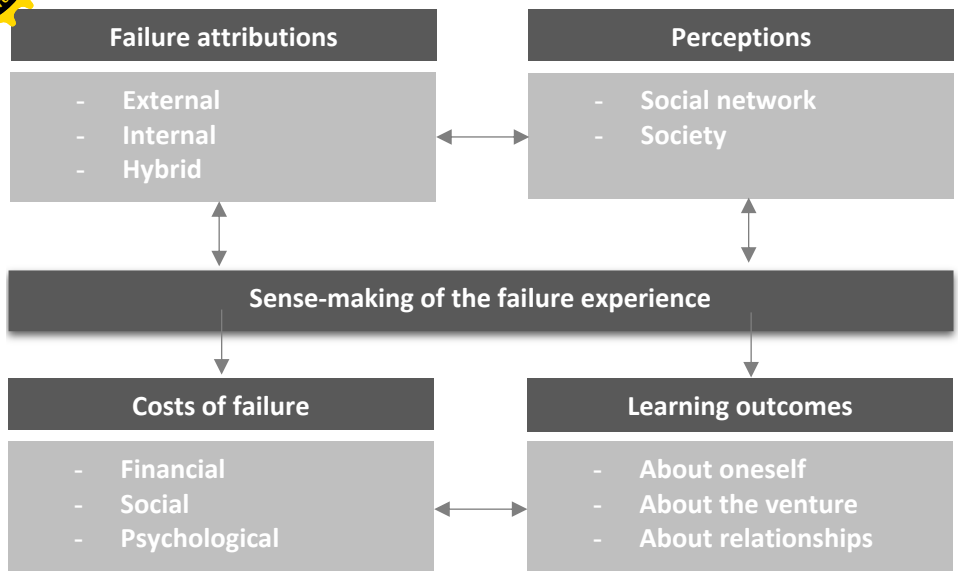

Figure 5 Process of sense-making and failure learning
Source: own illustration, based on Kücher & Feldbauer-Durstmüller (2019), Shepherd et al. (2016), and Ucbasaran et al. (2013)

Failure attributions

Following the IPA procedure, each case has been analysed individually to discover emergent themes. These emergent themes are thereafter analysed within the case and next across all cases to discover super-ordinate themes. Table 2 provides an overview super-ordinate themes of failure attributions.

Table 2 Super-ordinate themes of failure attributions

Super-ordinate themes	Bjoern	Cornelia	Jakob	Joseph	Karl	Keno	Luis	Martin	Rita	Steffen
Wrong/lack of decisions	X	X	X	X		X			X	X
Over-confidence	X		X					X		
Limited own resources		X				X				
Fear of change		X								
Partner behaviour	X					X	X			
Change in investor attitudes	X							X	X	
Change of market situation	X		X							
Customer behaviour										X
Change in legislation					X					

Perceptions of failure

Following the same procedure as described in the previous sub-section, super-ordinate themes as presented in table 3 have been brought to light.

Table 3 Super-ordinate themes of failure perceptions

Super-ordinate themes	Bjoern	Cornelia	Jakob	Joseph	Karl	Keno	Luis	Martin	Rita	Steffen
Genuine learning opportunity	X		X	X			X	X	X	X
Cultural aspects of blame and stigmatization	X			X		X			X	
Making sense of blame									X	
Blaming oneself										X
Lack of preparation (macro-level)								X		

Costs of failure

Costs of failure are a prominent feature in the sense-making of entrepreneurs after their experience of venture failure. The within-case analysis yielded such manifold data, so, for the purpose of the across-case analysis, a further sub-categorization of financial, social and psychological costs (Ucbasaran et al., 2013) has been applied. Table 4 provides an overview of all super-ordinate themes yielded by the data analysis.

Table 4 Super-ordinate themes of costs of failure

Super-ordinate themes	Bjoern	Cornelia	Jakob	Joseph	Karl	Keno	Luis	Martin	Rita	Steffen
Financial	X							X	X	X
Loss of private assets, debt, lack of liquidity	X							X	X	X
Social	**X**	**X**			**X**	**X**		**X**	**X**	
Diminished socio-economic status	X								X	
Friends and family: Being singled out		X				X			X	
Trust and responsibility					X			X	X	
Psychological		**X**				**X**		**X**	**X**	
Emotional: Grief, anxiety, mortification, pain		X	X			X	X	X	X	X
Motivational: dissatisfaction, helplessness		X	X			X				
Motivational: Capability to achieve goals				X	X				X	

Learning from failure

As already shown by the previous discussions, learning from entrepreneurial failure has to be understand as a complex, phenomenon, defined by its multiple interrelations with other aspects of the entrepreneurial journey. One of the destinations of the entrepreneurial journey is entrepreneurial learning and hence the question of "who an entrepreneur may become through learning" has been raised in previous research (Cope, 2005; Rae, 2005; Wang & Chugh, 2014, p. 28). In their systematic literature review on entrepreneurial learning, Wang & Chugh (2014) define learning from failure as a dstinctive process to better understand the roles of intuitive and sensing learning. The authors propose a research agenda, including the question of what and how entrepreneurs can learn from success and failure experiences. That question had been an essential impulse to undertake the present PhD research project. Therefore, the analysis of the participants' sense-making of failure learning experiences has been twofold. First, the interpretative phenomenological analysis yielded evidence in regard to failure perceptions, as learning from failure has been actively applied by most of the participants to see some positive aspects of the crucial life event. Second, to move beyond the pure sense-making, one of the prompts applied during the interviews highlighted learning outcomes experienced and learning strategies applied by the participants. These finding are presented, analysed and interpreted in IPA style in the following two subsections. Third, all statements about learning outcomes and learning strategies were additionally content-analysed for the purpose of a systematic study of subjectivity by application of the Q-methodology. These findings are presented and discussed in section 4.2.

The superordinate themes in regard to learning from failure are presented in table 5. Again, the within-case analysis yielded a vast amount of data,

and so, for the purpose of the across-case analysis, a further sub-categorization of learning about oneself, learning about the venture and learning about social relationships and networks has been applied. The three sub-categories have been developed from the research data and under consideration of studies originating from Cope (2011) and Quan & Hung (2016).

Table 5 Super-ordinate themes of failure learning

Super-ordinate themes	Bjoern	Cornelia	Jakob	Joseph	Karl	Keno	Luis	Martin	Rita	Steffen
About oneself	X	X	X	X	X	X	X	X	X	X
Self-efficacy and self-belief			X		X	X		X	X	
Grief recovery strategies		X	X	X	X		X		X	
Decision-making	X			X				X		X
Spirituality		X								
About the venture	**X**		**X**	**X**	**X**	**X**	**X**	**X**		**X**
Business model (strategy & structure)	X					X	X	X		
Business functions	X		X	X				X		X
Leadership & culture	X		X		X		X			
About relationships	**X**	**X**	**X**	**X**	**X**	**(X)**	**X**	**X**	**X**	**X**
Family & friends	X								X	
Business partner	X	X						X		
Business networks	X	X	X	X					X	
Mentoring					X				X	X
Wider public				X					X	

Sense-making and learning

Narratives have been proven to broaden our understanding of the sense-making and dealing with entrepreneurial failure (see for example Mantere et al., 2013). This study is based on the narratives of ten entrepreneurs, who previously experienced venture failure, defined as "the termination of a business that has fallen short of its goals" (Cope, 2011, p. 605). As learning from failure has been a central concept in the sense-making of all

participants and been identified as one of the super-ordinate themes in regard to the failure perception, a further examination of the narratives focus on the participants' abstract conceptualisation of their failure learning. In his study about different psychological types, Jung (1971) put forward the concepts of intuitive and sensing learning styles, which have been widely applied in education research. Sensing learners are analytical thinkers and practical oriented individuals who learn by knowing facts or details and are more likely to discover and identify an opportunity. Contrary, intuitive learners are considered as conceptional-oriented, abstract thinkers, and more prone to create new opportunities. Similarities of the sensing and intuitive learning types to the concrete-abstract learning dimension of Kolb's (1984) experiential learning cycle have been addressed by Cook, Thompson, Thomas, & Thomas (2009). Furthermore, it can be assumed that opportunity exploration may involve both intuitive and sensing learning (Wang & Chugh, 2014). Based on the participants' narratives, a qualitative assessment of their learning style preferences has been carried out. For that purpose, all statements made by the participants in regard to their learning style have been evaluated by the researcher and checked against the sensing-intuitive scale items of the Felder-Soloman Index of Learning Styles© (ILS) (Litzinger, Lee, Wise, & Felder, 2007).

The across-case analysis yielded pattern in the participants' abstract conceptualisation (how they learn from failure, based on their reflection) and four distinct ways of abstract conceptualisation can be differentiated. Participants with a higher sensing orientation (Karl, Martin and Steffen) explained their failure learning as a gain in knowledge on how to overcome barriers by application of new methods. Next, four participants (Bjoern, Jakob, Joseph and Rita) have shown both sensing and intuitive learning orientation, as they provide examples where they learned new facts and

gained new knowledge and at the same time talked about how the failure experience led them to a more comprehensive and more radical change in their attitudes and behaviours. The third group of participants (Keno and Luis) applies higher intuitive learning, their narrative shows little concrete learnings in regard to facts and knowledge, however, they are deeply concerned with recognising the larger picture, look for interrelations of several aspects of the failure and the effects their own behaviour had in co-founding relationships. The last type of abstract conceptualisation is particular in itself, as Cornelia, with her spiritual orientation, takes a purely intuitive learning approach. Although the sense-making narratives of the participants with a high intuitive learning style differ in some aspects, they all resulting in a rather disruptive change in the participants' personal and professional lives. Depending from the cause of the failure, the environmental situation and the experience of the entrepreneur, such learning might yet allow for future success. Martin has started a new, successful business after his insolvency, however, on a much smaller scale. Karl, now successful as an employed manager, with some entrepreneurial responsibilities and he is hence able to apply "lessons learned" from the venture failure. Steffen, however, seem to wait for an opportunity to move to the next stage of the learning cycle, active experimentation. A more intuitive approach, on the other hand, may lead to higher-order learning, but takes time and effort. Both participants have been able to develop an extensive understanding of their failure and are aware of values, beliefs and assumptions that possibly led to the failure. In their abstract conceptualisation, they have already overhauled these elements, however, they are still busy to create a new opportunity. Table 6 provides an overview of the narrative abstract conceptualisations of failure learning:

Table 6 Narrative abstract conceptualisations of failure learning

Sensing-Intuitive	Participants	Conceptual abstraction	Change mode	Examples
Sensing	Karl, Martin, Steffen	apply better methods	Adaption	implement risk management, improve decision-making process
Balanced	Bjoern, Jakob, Joseph, Rita	test your hypotheses	Evolution	Review core beliefs, doctrines, develop and test new assumptions
Intuitive	Keno, Luis	develop new sense	Reconstruction	Radical overhaul of beliefs, start from the scratch
Spiritual	Cornelia	focus on inner dimensions	Adaption	The heart is central and leads to meaningful constellations.

The pattern in the sensing-intuitive dimension of learning show parallels to the participants' application of unlearning and hence indicate a higher likelihood of learning from failure for the balanced dimension.

Summary of IPA results

The decision to apply IPA in the first study of the mixed-method research design was based on its capacity for links between the participants' understanding and the theoretical frameworks of mainstream entrepreneurship research (Smith et al., 2009). The results of the interpretative phenomenological analysis presented in the previous sections are manifold and show the close intertwining of failure attributions, perceptions of failure, costs of failure and learning from failure. All these influencing factors and outcomes are linked together via the process of sense-making. The aim of the IPA study was – by application of an inductive research

strategy – to find answers to the first three research questions. In the following paragraphs, possible answers to these questions will be provided, before turning to further unexpected or surprising findings that may need to get attention in further research.

RQ1: What narratives told by failed entrepreneurs to make sense of the failure experience?

RQ2: What is the role of learning strategies for the sense-making process?

RQ3: Which unlearning strategies are applied to overcome unsuccessful behaviour?

The analysis of the interviews has shown that all three research questions are strongly intertwined and answers shall not be provided in the proposed order. It came as a surprise that almost all participants assessed the learning which they got from the failure event as a genuine and much valued, although often emotionally stressful experience. A possible explanation for the strong resemblance of narratives may be found in the German setting of the study. In Germany, public discussions about a necessary re-conceptualisation of failure and the implementation of a more failure-friendly culture have been on the rise over the last three years. Judging from the research results, it seems that these attempts to reduce stigmatization and fear for failure have been successful, at least in entrepreneurial communities and networks. In regard to certain learning strategies, reflection is the common explanation for how learning takes place. Some participants have been aware that the "acid test" for learning is the practical application and hence they then told – in a rather operational way – which take-aways from their failure experience they have been able

to successfully apply in practice. Hence, the answer to the second research question, RQ2, has to come first: as participants are rather not aware of any certain strategies, they apply their learning in an operational way, led by their previous experiences and individual preferences. This finding provides some research opportunities for the second study of the mixed-method research design.

Furthermore, as shown in the previous section, the concept of unlearning is not present in the participants' sense-making (that being a rather expected finding), even the specific addressing of the concept has yielded hardly any results. As previous research has shown, unlearning is at first necessary at the individual level and additionally an important feature for proceedings of organizational change and organizational learning. Against that background, it is really surprising that participants seem not to apply unlearning or only apply it in a rather unconscious way. This would be contradicting to Hislop et al. (2014), who advocate that "unlearning […] involves a conscious process of choosing to give up, abandon, or stop using knowledge, values, or behaviours" (p. 547). Hence there may be much to gain from paying more attention to better understand the process as well barriers and enablers for individual unlearning in general and in an entrepreneurial failure context in particular. Hence, RQ3 can only be answered in a still unsatisfying way: it seems that unlearning is not applied in a conscious sense but rather unconsciously as a by-product of gaining new knowledge or developing different behaviour. Therefore, future research should address the topic in a more explorative way and by application of methods that allow for a direct study in the daily environment of the entrepreneur, such as action research.

Turning now to the first research question, here the answer contributes to the literature and broadens our understanding on how the experiential learning cycle (Kolb, 1984) occurs after entrepreneurial failure. This topic requires further research, as it has not been fully addressed by the majority of the experiential learning research (Wang & Chugh, 2014). As presented in the previous sections, the across-case analysis of individual narratives not only provides additional empirical evidence for learning being an integral part of the sense-making process after entrepreneurial failure. Additionally, a relationship between sensing and intuitive learning styles (Jung, 1971) and conceptional abstraction of learning as an element of Kolb's experimental learning cycle (1984) seem to exist. A more sensing-oriented approach leads participants to focus on a method- or technique driven narrative and results in adaptive changes in their personal and professional lives. Depending from the cause of the failure, the environmental situation and the experience of the entrepreneur, such learning might yet allow for future success. A more intuitive approach, on the other hand, may lead to higher-order learning, but takes time and effort. Finally, the combination of sensing and intuitive learning seems to offer the best ways to learn in the aftermath of failure. All of the participants in this group have not only been able to learn from failure by on the one hand apply newly gained knowledge and on the other question and - if necessary - replace misleading beliefs and unsuccessful behaviour. Additionally, they all have been able to move to the next stage in the learning cycle, active experimentation, and they stay mostly in an entrepreneurial context.

Some further unexpected findings have been the sense-making of and learning from failure from a spiritual perspective. Due to the scope of this study and the limited data (only one participant applies that approach)

these findings will not be considered further in this study; however, they are worth to be re-considered in a later study.

4.2 Q-methodology study results

In the following sections the findings of the second study in the mixed-method design, Q-methodology will be presented, analyzed and interpreted. The sub-chapter will be concluded with recommendations for the typology's practical application within the field of entrepreneurship education.

4.2.1 Quantitative data analysis

To recognize pattern in the opinions of a shared interest by certain groups of the population, participants are to be recruited for the formation of the so-called "P set". Whereas IPA requires a high homogeneity within the cohort of research participants, it is rather diversity in observable demographics (e.g. age, gender, social class, education) for Q-methodology, assuming an equivalent diversity in opinions (Watts & Stenner, 2012). Hence, 28 participants from two different university programs and from the start-up community have been recruited to engage in the Q-sort. Their characteristics can be described as follows: age ranges between 20 - 52 with an average age of 30 years; gender is 32 % male and 68 % female; 71 % are graduated with either a dual apprenticeship, bachelor or master degree and 29 % are undergraduates; 93 % have gained previous professional experience and 21 % already have gained start-up experience. A detailed overview of the participants' demographics is provided in table 7. The table starts with number 15, as the first fourteen participants of the mixed-method design were involved in the IPA research, but have not participated in the Q-methodology research.

Table 7: Demographics of Q-method participants

No	Age	Gender	Education	Professional experience	Start-up experience
15	24	female	student	yes	no
16	31	male	graduate	yes	no
17	35	male	graduate	yes	no
18	29	male	graduate	yes	no
19	22	female	student	yes	no
20	27	male	graduate	yes	no
21	25	male	graduate	yes	no
22	24	female	student	yes	no
23	24	male	graduate	yes	no
24	24	female	graduate	no	no
25	21	female	student	yes	no
26	24	male	student	yes	no
27	24	female	student	yes	no
28	52	female	graduate	yes	yes
29	23	female	graduate	yes	no
30	48	female	graduate	yes	no
31	43	female	graduate	yes	no
32	27	female	graduate	yes	no
33	20	female	student	no	no
34	49	female	graduate	yes	no
35	21	female	student	yes	no
36	26	female	graduate	yes	no
37	33	female	graduate	yes	no
38	33	female	graduate	yes	yes
39	29	female	graduate	yes	yes
40	32	female	graduate	yes	yes
41	38	male	graduate	yes	yes
42	33	male	graduate	yes	yes

By application of the statistical software R, package qmethd, the process of analysis starts with a multivariate data reduction technique utilized by principle component analysis (PCA) to reduce the correlation matrix between Q-sorts into components. Then the first few components are selected and mathematically optimal rotated in order to obtain a clearer and simpler structure of the data. After some experimentation with different sets of factors, the decision for a four-factor model has been taken. The rotation results are as follows:

Table 8 Factor matrix and factor characteristics

Participant	Factor			
	1	2	3	4
15	0.24	0.48	0.24	0.11
16	-0.02	0.13	0.72	0.15
17	0.32	0.12	0.53	-0.03
18	0.17	0.73	-0.10	-0.20
19	-0.21	0.07	0.22	0.48
20	0.45	-0.06	0.51	0.15
21	0.62	0.26	0.35	0.15
22	0.23	0.24	0.40	0.38
23	0.52	0.22	0.16	-0.05
24	0.39	0.66	0.18	0.20
25	0.18	0.76	-0.14	-0.03
26	0.19	0.36	0.38	0.55
27	0.01	0.49	0.12	0.49
28	0.31	-0.02	0.43	0.42
29	0.41	0.20	-0.25	0.39
30	-0.16	0.63	0.01	0.12
31	-0.17	-0.07	0.55	0.14
32	0.24	0.13	-0.07	0.62
33	0.18	0.52	0.06	0.35
34	0.53	0.22	0.05	0.39
35	0.15	-0.06	0.19	0.62
36	0.59	0.18	0.01	0.48
37	0.43	0.09	0.64	0.18
38	0.36	-0.37	0.07	0.56
39	0.68	0.24	0.19	0.23
40	0.53	0.38	-0.15	0.24
41	0.64	-0.20	0.19	0.03
42	0.16	-0.14	0.70	-0.06
No of defining variables		7	6	6	4
Eigenvalue		3.93	3.56	3.28	3.20
% of variance explained		14	13	12	11
Composite reliability		0.96	0.96	0.96	0.94
S. E. of factor z-scores		0.18	0.2	0.2	0.24

Note: Values calculated after factor rotation; indicating a defining sort (a significant loading)

Investigation of factor loadings, eigenvalues, explained variance, factor correlations and composite reliability scores suggests the four-factor solution, accounting for 50 % of the variance. Five Q sorts exhibited cross-loadings and therefore are not seen as defining variables for a factor. Each factor extracted represents a shared opinion of participants. All factors extracted meet standard criteria (Bolinger & Brown, 2015; Watts & Stenner, 2012) by showing eigenvalues in excess of 1.00, more than two Q sorts, hence participants significantly loading on each factor ($p < 0.05$), and satisfactory reliability scores. According to Hair, Black, William, Babin, & Anderson (2014), composite reliability should be > 0.7. A table containing the four factors or main perspectives, indicating the agreement or disagreement of the given perspective with each statement is provided in appendix 6 These factor scores presented represent the strength of agreement with all statements. For example, perspective (factor) F3 is in strong disagreement with statement 58 (scoring -6), whereas F2 rather takes the opposite opinion (scoring 3) and perspectives F1 and F4 show an ambivalent opinion (scoring -1 and 0, respectively).

As the quantitative Q factor analysis of the data suggests a four-factor solution, the interpretation of these results is the qualitative part of the method (Watts & Stenner, 2012). Factors are explained based on the factor scores (see table 9). The qualitative analysis and interpretation are based on a narrative procedure aiming to link themes and statements together to develop a joint impression of participants' viewpoints (Watts & Stenner, 2012). Therefore, several documents were developed to figure out which statements are ranked particularly high or low in comparison to other factor arrays (Watts & Stenner, 2012). The results are complemented with descriptive data of participants loading on the factors, including

information on age, gender, education, professional as well as start-up experience. Aggregated statistics by factor are shown in table 9.

Table 9 Descriptive characteristics organized by factor

	Age	Gender		Education		Professional	Start-up
	(mean)	Male	Female	Student	Graduate	experience	experience
Factor 1	32	43%	57%	29%	71%	100%	43%
Factor 2	28	17%	83%	50%	50%	67%	0%
Factor 3	34	67%	33%	0%	100%	100%	17%
Factor 4	26	0%	100%	50%	50%	100%	25%
n/a	30	20%	80%	60%	40%	100%	20%
Total	30	32%	68%	29%	71%	93%	21%

4.2.2 Qualitative data analysis

Factor 1: the reflective creator

In total, 7 participants load onto factor 1, and the factor explains 14 % of the variance. Participants loading on this factor strongly agree that failure should be preferred to not to try at all (similar to F3 and F4). However, they do differ in their appreciation of critical feedback, their ability to recognise early warning signals, their attention to reflection and the process of learning. On the opposite, the reflective creator strongly disagrees that one can only trust oneself (contrary to F4) and that commitments should be avoided in future (contrary to F3).

Taking a holistic approach to interpret the results, it is first to state that learning about the venture itself is the predominant perspective for the reflective creator, as the majority of distinguishing statements falls into that category (4: 4, 21: 4, 48: -6, 55: 5). Second, learning about social relationships is also present in the reflective creators' statements (33: 6, 6: -6), showing that failure does not generally damages trust in others. Third, the opinion group also recognizes learning as an essential part of the coping process in the aftermath of failure. Distinguishing statements (11: 4,

38: 3) show a higher appreciation of tools such as self-help books, videos, podcasts or talks to reflect upon and actively make sense of the failure event. The learning process is facilitated by time (12: 5).

Table 10 Learning themes presented within F1

Learning theme	distinguishing statements
Learning about oneself	0
Learning about the venture	4
Learning about social relationships	2
Learning as element of coping and sense-making	3

Factor 2: the intuitive analyst

The second factor explains 12 % of the variance and 6 participants load on it. This type shows especially weak correlations to factors 3 and 4 and hence presents the most differentiated standpoint (8 perspectives statistically distinct from all other factors). Important for the intuitive analyst is to recognize excessive demand as well as to acknowledge that failure is not an unavoidable prerequisite for success. Furthermore, the importance of consistent structures, agreements and contracts is evaluated with high importance as well as the appreciation of things done right (despite the failure). All these viewpoints are contrary to the other types. Turning to disagreement, the intuitive analyst strongly disagrees with the "Fail fast, fail often" mantra, this is in line with the preference for structure and time for reflection and sense-making of the event. Additionally, there is strong disagreement that failure is a catalyst for new energy – in general, the intuitive analyst has a tendency to see failure in a rather negative way and seems to have difficulties to learn from failure. For example, they are ambivalent about statements such as recognizing early warnings and whether learning can be seen as an acceptable outcome of failure. Additionally, they agree more than all other types on statements addressing negative

emotions such as anxiety to lose control, paralyzing self-doubt and the feeling that they "just don't get it anymore".

Taken together, intuitive analysts are focused on learning about themselves, as the majority of distinguishing statements falls into that category (9: 6, 14: 4, 32: 5, 43: 3, 56: -5, 60: 6). Additionally, the intuitive analyst is the only type agreeing - although moderately - with statements 29 and 58, that also fall in the category of learning about oneself. For all other learning outcomes, one statement in each case is of either distinct or highly relevant nature. In regard to learning about social relationships, the intuitive analyst – similar to F1 – strongly disagrees that one can only trust oneself (6: -5). Learning about the venture for the F2 type is limited to the recognition of the importance of structures, agreements and contracts (8: 5). In regard to the learning component of coping, they tend to experience struggles more often as they agree with metaphors in that sense (28: 3).

Table 11 Learning themes presented within F2

Learning theme	distinguishing statements
Learning about oneself	8
Learning about the venture	1
Learning about social relationships	1
Learning as element of coping and sense-making	2

Factor 3: the expressive realist

To report on factor 3, the expressive realist, there is an explained variance of 12 % and again 6 participants load on that factor. The expressive realist strongly agrees with the importance not to hide after failure and not to blame somebody (as there is nobody to blame) for failure. That stance differentiates the expressive realist from all other types. Additionally,

they are the only type to recognize intuition as an important aspect of learning from failure, they feel more free and ready to take up something new as there is nothing to lose anymore and they agree that the failure event has to be closed before they can start a new project. On the disagreement side, the most differentiating statements are that expressive realists show no sign of any negative emotions such as paralyzing self-doubt, loss of ease and they also deny the need for higher safety measures.

Similar to the intuitive analyst, also the expressive realist mainly learns about themselves. However, contrary to F2, they rather seem to learn about their strengths, as their agreement (15: 3, 18: 2, 47: 4) as well as disagreement with opinions (13: -6, 29: -4, 58: -6) show. Additionally, they seem to have less barriers to learn also in the coping phase, as high relevance of statements (25: 6, 28: -5) show. Learning about social relationships does not take a seat in the front row for F3, with most of the statements falling into the ambivalent area of the q-sort and only one distinguishing opinion - interestingly they moderately agree they can only trust themselves (6: 3). Learning about the venture also is less present for the expressive realist, here again the expressive realist seems to be ambivalent about most of the statements, except their agreement that failure tend to have many roots (24: 5). Expressive realists do not see intuition as one of the learning facilitators (52: -3), a factor distinguishing their group especially from F4.

Table 12 Learning themes presented within F3

Learning theme	distinguishing statements
Learning about oneself	6
Learning about the venture	1
Learning about social relationships	1
Learning as element of coping and sense-making	3

Factor 4: the growth-oriented pragmatist

The last factor extracted has four participants loading on and an explained variance of 11 %. Differentiating agreements are the realization of own strength during a crisis and that crises can have a deeper sense such as providing the opportunity for growth. Also, the growth-oriented pragmatist agrees with statements such as seeing failure as catalyst for new energy and that learning from failure happens first through process routines and later intuitively as well as the requested acceptance of an (failure-induced) ending, all of these statements having been neglected by the other three types. For the disagreement statements, differentiators are the stronger trust in friends' honesty after failure and the deny that "things take their time, a short-time perspective does not help". It is also worth mentioning that growth-oriented pragmatists are the group with most differentiators in the ambivalence area (10 differentiators compared to 4 or 5, respectively). For example, the assumption that one can only trust oneself is strongly denied by reflective creators and intuitive analysts, whereas expressive realists rather tend to agree. Additionally, tools for reflection such as diaries or motivational support such as books or pod-casts, are either denied by the intuitive analysts and expressive realists or seen as helpful (motivational support tools) by the reflective creator. This "middle-of-the-road" tendency could be interpreted as a certain strength of the growth-oriented pragmatist, they on the one hand seem to be open-minded and on the lookout for tools that support their learning from failure, but on the other hand critical enough to understand that different events request different measures.

As for the learning themes, again learning about oneself gains the majority of interest, however with only 3 distinguishing perspectives (27: 6, 36: 5, 56: 4) the growth-oriented pragmatist stays behind. All other themes

only include one distinguishing statement, for learning about social relationships it is 54: -5; for coping 59: 3 and for learning about the venture 7: -5. Contrary to F3, the growth-oriented pragmatist tends to agree with intuition playing some facilitating role in the process of learning (52: 3).

Table 13 Learning themes presented within F4

Learning theme	distinguishing statements
Learning about oneself	3
Learning about the venture	1
Learning about social relationships	1
Learning as element of coping and sense-making	2

A further discussion of the research results will follow in chapter 5.

4.3 Failure learning association tests

Different from personality traits, human behaviour is more fluid or context-sensitive (Gemmell, 2017) and several models have been developed to help individuals increase their awareness of behavioural pattern and the likely results they will get from a certain behaviour in a certain environment. However, it would be interesting to know whether associations do exist between behavioural styles and failure learning behaviour as presented by the failure learning archetypes. the Social Styles model has been chosen for the test, as it additionally includes a peer evaluation and the measure of versatility, which is defined as a person's ability to manage their behaviour appropriate to any style they may have to relate to in a certain social interaction. The concept of versatility shows some similarities to the well-discussed concept of emotional intelligence (Goleman, 1999; Salovey & Mayer, 1990), with particular focus on aspects of emotional intelligence that are relevant for workplace situations (Tracom, 2014).

As already discussed in the methodology chapter, behavioural pattern of all participants have been assessed by application of the Social Styles Inventory. Table 14 provides a summary of the participants' demographics.

Table 14 Participants' demographics, archetypes, styles and versatility

No	Gender	Age	Education	Professional experience	Start-up experience	Failure Learning Archetype	Social Style	Versatility*
1	female	34	graduate	yes	yes	Growth-oriented pr.	Amiable	y
2	male	26	student	yes	yes	Expressive realist	Expressive	x
3	male	58	graduate	yes	yes	Expressive realist	Expressive	x
4	male	33	graduate	yes	yes	Reflective creator	Amiable	y
5	female	38	graduate	yes	yes	Growth-oriented pr	Amiable	y
6	male	60	graduate	yes	yes	Reflective creator	Expressive	x
7	male	49	graduate	yes	yes	Reflective creator	Expressive	z
8	male	37	graduate	yes	yes	Reflective creator	Expressive	x
9	female	42	graduate	yes	yes	Growth-oriented pr	Driving	z
10	female	25	graduate	yes	yes	Expressive realist	Expressive	z
11	male	34	graduate	yes	yes	Reflective creator	Amiable	z
12	male	47	graduate	yes	yes	Reflective creator	Expressive	y
13	female	34	graduate	yes	yes	Reflective creator	Expressive	z
14	male	34	graduate	yes	yes	Reflective creator	Expressive	y
15	female	24	student	yes	no	Intuitive analyst	Amiable	x
16	male	31	graduate	yes	no	Expressive realist	Driving	w
17	male	35	graduate	yes	no	Expressive realist	Expressive	x
18	male	29	graduate	yes	no	Intuitive analyst	Analytical	w
19	female	22	student	yes	no	Growth-oriented pr	Driving	w
20	male	27	graduate	yes	no	Expressive realist	Driving	w
21	male	28	graduate	yes	no	Expressive realist	Expressive	w
22	female	24	student	yes	no	Expressive realist	Analytical	x

No	Gender	Age	Education	Professional experience	Start-up experience	Failure Learning Archetype	Social Style	Versatility*
23	male	24	graduate	yes	no	Reflective creator	Driving	w
24	female	24	graduate	no	no	Reflective creator	Amiable	x
25	female	21	student	yes	no	Intuitive analyst	Analytical	w
26	male	24	student	yes	no	Growth-oriented pr	Analytical	w
27	female	24	student	yes	no	Growth-oriented pr	Analytical	w
28	female	52	graduate	yes	yes	Expressive realist	Amiable	y
29	female	23	graduate	yes	no	Reflective creator	Amiable	y
30	female	48	graduate	yes	no	Intuitive analyst	Analytical	w
31	female	43	graduate	yes	no	Expressive realist	Amiable	z
32	female	27	graduate	yes	no	Growth-oriented pr	Amiable	z
33	female	20	student	no	no	Intuitive analyst	Amiable	y
34	female	49	graduate	yes	no	Reflective creator	Amiable	z
35	female	21	student	yes	no	Growth-oriented pr	Analytical	w
36	female	26	graduate	yes	no	Reflective creator	Amiable	z
37	female	33	graduate	yes	no	Expressive realist	Driving	x
38	female	33	graduate	yes	yes	Growth-oriented pr	Amiable	z
39	female	29	graduate	yes	yes	Reflective creator	Expressive	z
40	female	33	graduate	yes	yes	Reflective creator	Amiable	z
41	male	38	graduate	yes	yes	Reflective creator	Analytical	w
42	male	35	graduate	yes	yes	Expressive realist	Analytical	x

* w=lower than 75%, x=lower than 50%, y=higher than 50 % and z=higher than 75% of the norm group

The inventory was carried out via online assessment and includes both self-evaluation as well as third-party evaluation. The statistical procedure for style and versatility estimations was provided by Tracom right after the submission of the online assessment (done individually by each single participant and their third-party feedback providers in their own time).

Reports released to the researcher provide information on each participant's specific behavioural pattern (driving, expressive, amiable or analytical) and their level of versatility (w=lower than 75%, x=lower than 50%, y=higher than 50 % and z=higher than 75% of the norm group). The data is hence represented in a categorial format, same as the failure learning archetype data extracted by the Q-methodology study. For the Social Style assessment, table 25 only includes the third party evaluation, first for the reason to avoid any self-report biases as discussed earlier (Podsakoff & Organ, 1986). Furthermore, a pre-test carried out within the process of the statistical analysis has shown stronger associations within the third-party-evaluation dataset compared to the self-evaluation dataset.

The dataset (see table 14) has been used for cross-tabulation and descriptive statistical analyses with several association tests by application of the statistical software IBM SPSS Statistics 25. For a statistical evaluation of datasets consisting of categorial variables, computing correlations (or for categorical data associations) can be done by application of various statistical metrics such as chi-square test or Goodman Kruskal's lambda, which was initially developed to analyse contingency tables. Contingency tables or cross tabulation display the multivariate frequency distribution of variables and are heavily used in scientific research across disciplines. However, there are some drawbacks with such metrics, as the contingency coefficient C suffers from the disadvantage that it does not reach a maximum value of 1. The highest value of C for a 4x4 table (as used in this study) is 0.870. Further, other measures such as Cramer's V can be a heavily biased estimator, especially compared to correlations between continuous variables and will tend to overestimate the strength of the association (Bühl & Zöfel, 2002).

For the first calculation, failure learning archetypes and Social Style behaviour pattern, the cross-tabulation is provided in table 15, representing the number of cases and their distribution.

Table 15 Cross-tabulation of failure learning archetypes and social styles

		Reflective Creator	Intuitive Analyst	Expressive Realist	Growth-Oriented Pragmatist	Total
Amiable	cases	7	2	2	4	15
	% within Social Style	46,7%	13,3%	13,3%	26,7%	100,0%
	% within Learning	43,8%	40,0%	16,7%	44,4%	35,7%
	% total	16,7%	4,8%	4,8%	9,5%	35,7%
Analytical	cases	1	3	2	3	9
	% within Social Style	11,1%	33,3%	22,2%	33,3%	100,0%
	% within Learning	6,3%	60,0%	16,7%	33,3%	21,4%
	% total	2,4%	7,1%	4,8%	7,1%	21,4%
Driving	cases	1	0	3	2	6
	% within Social Style	16,7%	0,0%	50,0%	33,3%	100,0%
	% within Learning	6,3%	0,0%	25,0%	22,2%	14,3%
	% total	2,4%	0,0%	7,1%	4,8%	14,3%
Expressive	cases	7	0	5	0	12
	% within Social Style	58,3%	0,0%	41,7%	0,0%	100,0%
	% within Learning	43,8%	0,0%	41,7%	0,0%	28,6%
	% total	16,7%	0,0%	11,9%	0,0%	28,6%
Total	cases	16	5	12	9	42
	% within Social Style	38,1%	11,9%	28,6%	21,4%	100,0%
	% within Learning	100,0%	100,0%	100,0%	100,0%	100,0%
	% total	38,1%	11,9%	28,6%	21,4%	100,0%

The distribution of cases across the failure learning archetypes was already discussed in section 4.2.2. For the Social Styles, amiable and expressive styles are the largest groups and driving style the smallest. Such a distribution might be explained either by the small sample or by bias of self-selection during the sample recruiting.

Table 16 presents the association measures between both the failure learning archetypes and Social Styles. Although no dependent variable has been estimated, there should be a higher likelihood for failure learning being determined by social style behaviour.

Table 16 Association tests of failure learning archetypes and social styles

		Chi-square	df	p-value
Pearson		10,374	9	,321
Likelihood Ratio		12,231	9	,201
			value	p-value
Phi			,497	,321
Cramer-V			,287	,321
Lambda	symmetrical		,151	,063
	Social Style dependent		,148	,241
	Learning dependent		,154	,147
Goodman-and-Kruskal-Tau	Social Style dependent		,131	,063
	Learning dependent		,129	,069

Results from the statistical analysis only show a weak association, with Cramer's V 0.287, Goodman and Kruskal's Lambda 0.154, and Goodman and Kruskal's Tau 0.129, all statistically non-significant with p-values > 0.05.

Turning to the second calculation, failure learning archetypes and versatility level, an overview of results from the crosstabulation is provided in table 27.

Table 17 Cross-tabulation of failure learning archetypes and versatility

			Reflective Creator	Intuitive Analyst	Expressive Realist	Growth-oriented Pragmatist	Total
versatility	w	cases	2	3	3	4	12
		% within versatility	16,7%	25,0%	25,0%	33,3%	100,0%
		% within learning	12,5%	60,0%	25,0%	44,4%	28,6%
		% total	4,8%	7,1%	7,1%	9,5%	28,6%
	x	cases	3	1	6	0	10
		% within versatility	30,0%	10,0%	60,0%	0,0%	100,0%
		% within learning	18,8%	20,0%	50,0%	0,0%	23,8%
		% total	7,1%	2,4%	14,3%	0,0%	23,8%
	y	cases	4	1	1	2	8
		% within versatility	50,0%	12,5%	12,5%	25,0%	100,0%
		% within learning	25,0%	20,0%	8,3%	22,2%	19,0%
		% total	9,5%	2,4%	2,4%	4,8%	19,0%
	z	cases	7	0	2	3	12
		% within versatility	58,3%	0,0%	16,7%	25,0%	100,0%
		% within learning	43,8%	0,0%	16,7%	33,3%	28,6%
		% total	16,7%	0,0%	4,8%	7,1%	28,6%
Total		cases	16	5	12	9	42
		% within versatility	38,1%	11,9%	28,6%	21,4%	100,0%
		% within learning	100,0%	100,0%	100,0%	100,0%	100,0%
		% total	38,1%	11,9%	28,6%	21,4%	100,0%

The labels of versatility categories are to be interpreted as follows: w=lower than 75%, x=lower than 50%, y=higher than 50 % and z=higher than 75% of the norm group, cases with lowest and highest versatility levels show the same size, followed by cases which show a versatility lower than 50% of the norm group. Table 18 presents the association measures between both the failure learning archetypes and the concept of versatility. Although no dependent variable has been estimated, there should be a higher likelihood for failure learning being determined by the level of versatility.

Table 18 Association tests of failure learning archetypes and versatility

	Chi-square	df	p-value
Pearson	14,281	9	,113
Likelihood Ratio	16,970	9	,049
		value	p-value
Phi		,583	,113
Cramer-V		,337	,113
	symmetrical	,232	,053
Lambda	Versatility dependent	,267	,049
	Learning dependent	,192	,188
Goodman-and-	Versatility dependent	,119	,103
Kruskal-Tau	Learning dependent	,121	,093

Similar to the calculation of associations between failure learning archetypes and social style, the calculation of associations between failure learning archetypes and versatility only show slightly better results, with Cramer's V 0.337, Goodman and Kruskal's Lambda 0.192, and Goodman and Kruskal's Tau 0.121, all statistically non-significant with p-values > 0.05. The only significant association seems to exist between failure learning and versatility with versatility as the dependent variable. However, this result is rather equivocal and will be further discussed in the next section.

5 Conclusion

In general, research findings can be categorized as follows: first, findings can contribute to existing knowledge of an aspect of the reality studied, or the findings may help to improve ways of thinking (Saunders et al., 2009). The first part of the study has been able to yield unique findings in the first category, by application of interpretative phenomenological analysis. With the second fieldwork, executed by Q-methodology, the findings may fall in the second category, as the failure learning archetypes extracted from the q-sorts, shall enhance the sensitivity for the topic of learning from failure in the field of entrepreneurship education. Furthermore, the exploration of associations between failure learning archetypes and social behaviour represented by the Social Style model has shown only weak, statistically non-significant associations between the two models. Hence, the association test further strengthens the concept of failure learning archetypes discussed in section 4.2. Figure 6 shows an amended version to summarize most important research findings from all single elements of the study.

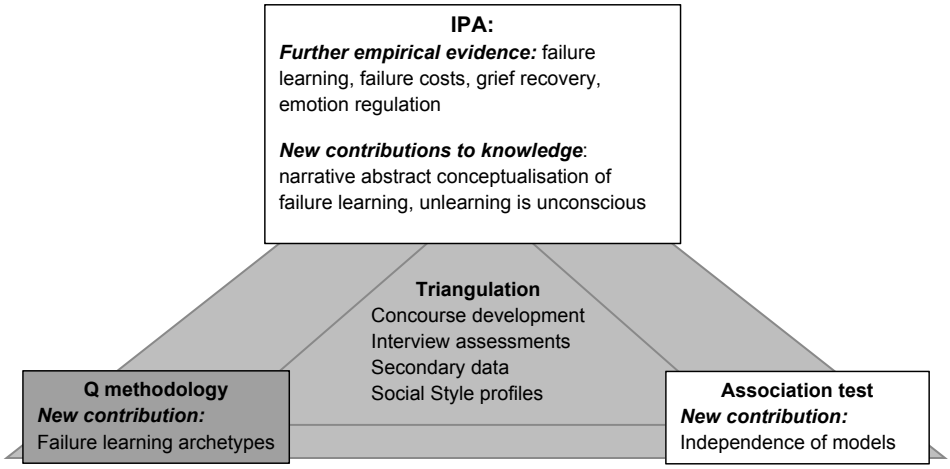

Figure 6 Compilation of research results
Source: own illustration, based on Schönbohm & Jülich (2016)

To conclude, the research objectives addressed at the begin of the study have been achieved by answering the research questions as follows:

First, narratives by the entrepreneurs who went through venture failure have been rich in their variety of experiences and their colourful expressions of emotions and opinions. It came as a surprise that almost all participants assessed the learning which they got from the failure event as a genuine and much valued, although often emotionally stressful experience. The issues of stigmatization and fear for failure have been present, however, with distinctive differences between the participants. Entrepreneurs with a strong network within the start-up community have been less likely to experience stigmatization and/or fear of failure.

Second, as participants are rather not aware of any certain strategies, they apply their learning in an operational way, led by their previous experiences and individual preferences. This finding shows a clear need for further research to provide frameworks or models that shall support a greater awareness of different strategies and their likelihood of success in different settings.

Third, it seems that unlearning strategies are not existent as the concept is applied rather unconsciously as a by-product of gaining new knowledge or developing different behaviour. Therefore, future research should address the topic in a more explorative way and by application of methods that allow for a direct study in the daily environment of the entrepreneur, such as action research.

Fourth, by utilizing Q-Methodology, the study has been able to identify a framework of four learning archetypes, showing different behaviour in regard to grief recovery, emotion regulation, social networks and the ap-

plication of generative, double loop and higher-order learning. Their different attitudes in all of these six categories leads to a generally more or less readiness to learn in the aftermath of failure.

Fifth (and last), the failure learning archetypes seem to have only weak, statistically non-significant associations with the Social Styles model. This leads to a reasoning to recommend the framework for a practical application in the context of entrepreneurship education, independent from any soft skill development programs that may be existent in some programs.

6 New scientific results

The study contributes in a twofold manner, first by expanding existing knowledge of an aspect of the reality studied, and second, by improving ways of thinking (Saunders et al., 2009). New scientific contributions in regard to theory development have all been yielded by the IPA research. The exploratory part of the mixed-method research design contributes to scientific knowledge insofar, that theories proposed elsewhere have been empirically tested in a new environment, Germany, and with the additional benefit of assessing behaviour styles and versatility by application of the Social Styles Model. These findings are listed below

1. Failure often generates positive and genuine learning experiences.

2. A high ability for emotion regulation is likely to enhance learning from failure.

3. Stigmatization and failure perceptions are influenced by the way failure is presented in the media.

4. Grief recovery, costs of failure and emotional intelligence are important determinants of failure learning.

5. Entrepreneurs can evolve spiritually by experiencing venture failure.

Especially the influence of media reports on stigmatization and failure perceptions (finding no 3) as well as the spiritual approach to failure recovery (finding no 5) addressing aspects in entrepreneurship and entrepreneurial failure that are to date clearly under-researched. These findings allow us to understand the experience of entrepreneurial failure and the likelihood of learning from the failure experience by presenta-

tion of narratives of failed entrepreneurs applied for their individual sense-making.

Turning to the new scientific contributions in regard to theory building, finding no 6 presents interrelations between higher-order learning orientation and narrative abstract conceptualisations of the failure learning experience. The across-case analysis of the IPA study yielded pattern in the participants' abstract conceptualisation (how they learn from failure, based on their reflection) and four distinct ways of abstract conceptualisation can be differentiated:

- Sensing orientation, where failure learning is explained as a gain in knowledge on how to overcome barriers by application of new methods;
- Intuitive orientation, with less focus on learning of facts and knowledge and higher attention on interrelations of several aspects of the failure and the effects of own behaviours;
- Balanced orientation, as a combination of both sensing and intuitive orientation, where attention is spent to learning of new knowledge as well as to personal attitudes and behaviours;
- Spiritual orientation, where all sense-making is rooted in spiritual experiences and learning is seen as something created by the balance of heart, mind and body.

The balanced (sensing-intuitive) dimension mirrors the participants' (rather unconscious) application of unlearning and these participants indicate a higher likelihood of learning from failure.

Next, finding no 7 offers new insights in the conceptualisation of unlearning. The concept of unlearning itself is not present in the participants'

sense-making but seems to happen rather unconsciously as a by-product of gaining new knowledge or developing different behaviour. This finding contradicts previous research, stating that unlearning as a conscious process at the individual as well as on the organizational level is a precondition for organizational learning. Against that background, it is really surprising that participants seem not to apply unlearning or only apply it in a rather unconscious way. Hence, this finding shows that there may be much to gain from further research aiming to better understand the process of individual unlearning in general and in the context of entrepreneurial failure in particular.

Lastly, finding no 8 summarizes the results from the three studies by the proposal of a framework of four distinct failure learning archetypes. Based on the exploratory interviews, 60 statements of failure learning have been sorted by 28 participants and their opinions were analysed by application of Q-methodology. The results show that four distinct archetypes of failure learning do exist, labelled reflective creator, intuitive analyst, expressive realist, and growth-oriented pragmatist. These groups have different opinions about how to learn and what to learn from failure, with a higher or lower chance that learning will take place at some point.

To test the unique position of the framework, statistical association tests have been applied to investigate potential relationships between both the four distinct social styles types as well as the levels of versatility. Both associations tests yielded only weak, statistically non-significant associations between the different models. Hence, the framework of failure learning archetypes has a singular position in the literature of entrepreneurial failure and learning from entrepreneurial failure.

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To summarize, although each of the research outcomes presented in this chapter contributes to or expanses existing knowledge, the framework of failure learning archetypes can be seen as the primary outcome of the dissertation study, as it is the first of its kind especially for enhancing entrepreneurial learning in regard to venture failure and may therefore also pave the way for further research taking this framework as a basis for advanced inquiries in the field. It may also be discussed in other countries or in a narrower segment, for example entrepreneurship education.

7 Proposals for practical and theoretical use

The broad objective of this study was to identify narratives of entrepreneurs in regard to their sense-making of and learning from failure. The analysis of the narratives has yielded several ways to cope with and recover from entrepreneurial failure. Actors in the field of entrepreneurship education can draw from the findings to enhance their understanding and are provided with examples of methods and instruments to increase the understanding of the role of emotions in learning from failure. Methods such as mentoring, coaching and peer feedback are already recognized in some entrepreneurship programs, however, the introduction of reflection diaries or mindfulness programs to enhance self-passion may further improve individual levels of emotional intelligence.

Furthermore, often new ventures are founded by an entrepreneurial team, and integrating individual entrepreneurial behaviours in collective actions may be an additional challenge. Programs such as the Social Styles model may help to mitigate team conflicts as attention is drawn not only to individual behaviour but especially to the social interaction, how others may experience a certain behaviour and how to develop strategies to adjust to the behavioural preferences in a certain relationship. Such programs additionally help to increase individual emotional intelligence.

Finally, the largely exploratory and theory-generating Q-methodology (Stenner et al., 2012) allowed to reveal a typology of four conceptually different failure learning archetypes. While the methodology does not permit to make definitive claims about the relative distribution of these archetypes across a population (Stenner et al., 2012), the number of individuals loading on a respective factor provides a preliminary indication of

the prevalence of more or less likely learning challenges. Hence, the insights from the framework may be of value to actors in entrepreneurship education and in the start-up community. The knowledge about different determinants and outcomes of learning from failure appears to be of particular relevance for drafts and compilations of new curriculums as well as in regard to the allocation of resources. Not only experience, education or background of entrepreneurial students and nascent entrepreneurs may be an indication for the entry decision and hence the creation of a venture with economic and societal value, but also the entrepreneurs' approach to handle crucial events and to learn from these events.

For a further theoretical application, the research has shown some promising trajectories for future research, most prominently to mention would be attempts to take an inventory of the relative distribution of more or less failure-learning affine entrepreneurs within a given country. While the current study reveals different archetypes of failure learning, it can at best give a rough indication of whether "the vast majority", "a selected minority", or something in-between can be classified as "learning-affine". A survey developed based on the failure learning archetypes administered to a large, representative sample of entrepreneurs and/or entrepreneurship students could potentially give insights into this. Similarly, the findings in regard to the assumingly unconsciousness of individual unlearning invites for further research in an under-researched area to increase our knowledge about processes, barriers and enablers of individual unlearning. Furthermore, the first theoretical considerations in regard to the narratives of conceptual abstractions of failure learning are again solely based on theoretical reasoning and may be benefit from direct empirical testing. Additionally, the finding of positive influence of media reports on the benefits of failure in regard to learning opportunities may be looked at in more

detail by future research. It would be interesting to see whether this has been a German "Zeitgeist" phenomenon and would the long-term possibly effect in a cultural change in regard to entrepreneurial intention and fear of failure.

8 Acknowledgements

There are several people without whom the PhD studies would not have been possible. I am deeply grateful for their support.

First of all, my husband Thomas, who always had an open ear for my sorrows and who supported me dearly in every possible aspect. Also, my friends and family always gave me a lot of support during my academic endeavours in the last years and were always very understanding when I had to skip any invitations or celebrations.

There are also numerous people in the academic field I would like to express my gratitude. My supervisor, Dr. habil Szilárd Berke did a great job in supporting but also challenging my ideas. Also, Prof. Dr. Sandor Kerekes, Dr. György Kövér and Prof. Dr. Gunnar Siemer were always supportive. Special thanks go in the direction of Prof. Dr. Sabine Nitsche and Prof. Dr. Thomas Henschel, who helped me with the iterations to develop the concourse for the Q-Methodology study. And of course, there were many meetings and discussions with academics on the field of entrepreneurial failure and failure learning as well as other disciplines that were very fruitful and helped reflecting on specific issues. This also includes the fellow students of the PhD cohort with whom a constant exchange of experiences was established.

On the practitioner side, of course I would like to thank all colleagues from the HTW Berlin Start-up competence centre as well from the HFH Studienzentrum Hamburg. And last and most importantly, I am indebted to all the interviewees and participants that were willing to share their experiences and their valuable time with me. Without them, the whole research would not have been possible!

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10 Publications and conference presentations

Publications related to the dissertation

Durst, S., Heinze, I., Henschel, T., Nawaz, N. (in press): Unlearning: a systematic literature review. International Journal of Business and Globalisation.

Heinze, I, Henschel, T. (in press): Risk(ing) sophistication: towards a structural equation model for risk management in small and medium-sized enterprises. International Journal of Entrepreneurship and Small Business.

Heinze, I. (2018): Research in decision making under risk and attitudes towards risk in an entrepreneurial environment. In: Berneburg, A., Pick, D. (Hrsg.): Marktorientierte Unternehmensführung – Innovative Methoden und ökonomische Perspektiven. Shaker Verlag.

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Publications not related to the dissertation

Heinze, I. (2017): Duck turns into Rabbit: Paradigm Shifts in Economics – Challenges for the 21st Century Manager. Regional and Business Studies, Vol 9, No 1, pp. 1-10.

Heinze, I., Henschel, T. (2018): Das Personalmanagement – ein „digital failure“? In: Hartmann, M. (Hrsg.): Digitale Lösungen für Berliner Unternehmen. Berliner Wissenschaftsverlag.

Henschel T., Heinze I. (2018): Governance, Risk & Compliance. In: Schmeisser, W., Becker, W., Beckmann, M., Brem, A., Eckstein, P. P.,

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Conference presentations

ICSB International Conference for Small Business, Cairo, 20.06.2019: Failure learning: fast and furious or keep calm and carry on?

Kaposvár University Research Conference, 22.02.2018: Entrepreneurial learning from failure: the illiterates of the 21st century

ICSB International Conference for Small Business, Buenos Aires, 01.07.2017: Technology-based teaching and research: The Governance, Risk and Compliance Quick Check for Small and Medium-sized Enterprises

ICSB International Conference for Small Business, Buenos Aires, Doctoral Consortium, 28.06.2017: Social aspects in regard to business failure

Jönköping University, Jönköping International Business School, 08.02.2017: Social aspects in regard to business failure

University of Skövde, School of Business, Sweden, 09.11.2016: Business failure as a source for empowerment: a systematic review of coping strategies

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11 Professional CV of the PhD candidate

Higher Education

Master of Science (MSc) Psychological Research Methods	The University of Edinburgh School of Philosophy, Psychology and Language Sciences 2010 – 2011
Bachelor (Hons) Business Administration	AKAD Fachhochschule Leipzig University of Applied Sciences 2002 – 2006

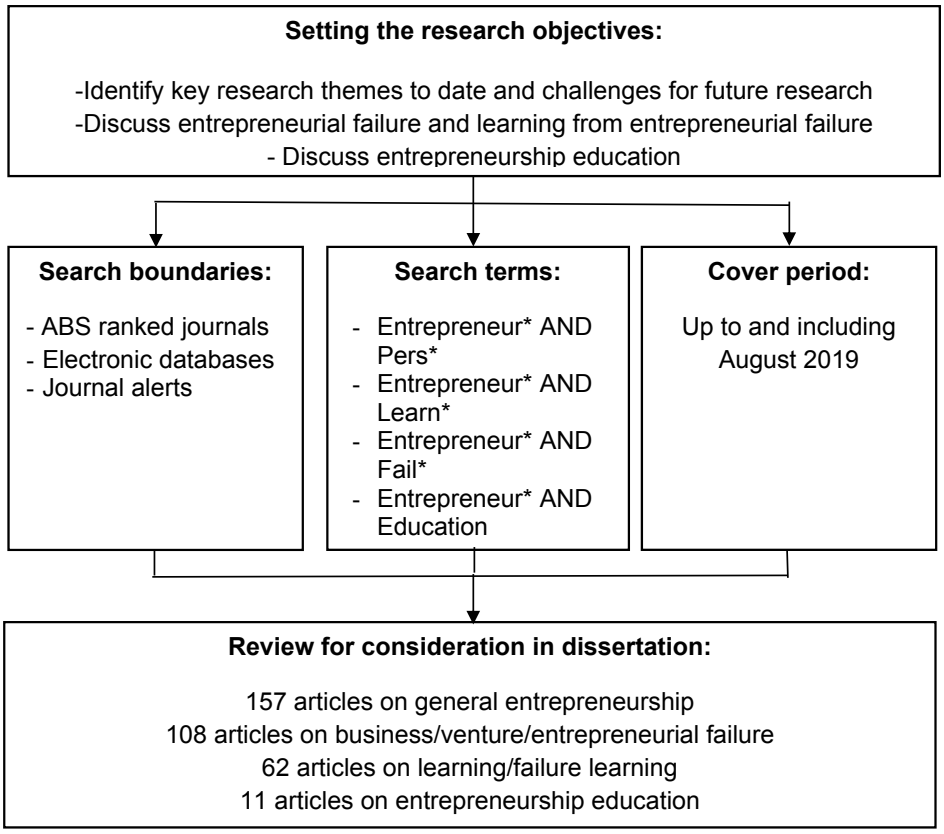
Current academic teaching experience

Beuth Hochschule Berlin, Hamburger Fernhochschule (HFH), Hochschule für Technik & Wirtschaft Berlin, Hochschule für Wirtschaft & Recht Berlin, Hochschule Neubrandenburg

Professional experience

Current	***Partner & CEO***, wee consult Personal- und Risikomanagement, Berlin
August 2013 - March 2016	***Interim Assistant Director Talent,*** EY GmbH GSA, Frankfurt/M. & Berlin
Jan 2003 – Jul 2009	***Assistant Director HR Operations,*** Ernst & Young AG, Berlin, Leipzig

Appendix 1: Systematic Literature Review



Appendix 2: Quality criteria for qualitative research

to enhance transparency and ensure replicability in qualitative research designs (Aguinis & Solarino, 2019, p.5-6)

ID	Transparency criterion	Definition	Criterion is necessary for replicability because...	Exact replication	Empirical replication	Concep replica
1	*Kind of qualitative method*	The particular qualitative methodology used in the study (e.g., action research, case study, grounded theory) (Creswell, 2007; Flick, 2014; Patton, 2002)	… a method's assumptions, beliefs, and values affect theory, design, measurement, analysis, and reporting choices, as well as the interpretation of results	✓	✓	
2	*Research setting*	The physical, social, and cultural milieu of the study (e.g., firm conditions, industry, participants' social status) (Bhattacharya, 2008; Patton, 2002)	...it clarifies the structure, the sources and the strength of the pre-existing conditions in the research setting	✓		✓
3	*Position of researcher along the insider-outsider continuum*	The researcher's relationship with the organization and study participants; the closer the relationship, the more the researcher is an insider rather than an outsider (Evered & Louis, 1981; Griffith, 1998)	... it allows for an understanding of the researcher's relationship with the organization and participants, which can alter accessibility of data, what participants disclose, and how the collected information is interpreted	✓		✓
4	*Sampling procedures*	The procedures used to select participants or cases for the study (e.g., convenience, purposive, theoretical) (Patton, 2002; Teddlie & Yu, 2007)	... given that samples are not probabilistic, it clarifies what kind of variability the researcher is seeking (and along which specific dimensions), and the presence of possible biases in the sampling procedure	✓		✓
5	*Relative importance of the participants/cases*	The study's sample and the relative importance of each participant or case (Aguinis, Gottfredson, & Joo, 2013; Dexter, 1970)	.. it allows for the identification of participants and cases with similar characteristics as in the original study	✓		✓
6	*Documenting interactions with participants*	The documentation and transcription of the interviews and all other forms of observations (e.g., audio, video, notations) (Kowal & O'Connell, 2014)	...different means of documenting interactions may alter the willingness of participants to share information and therefore affect the type of information gathered	✓	✓	
7	*Saturation point*	It occurs when there are no new insights or themes in the process of collecting data and drawing conclusions (Bowen, 2008; Strauss & Corbin, 1998)	…identifying the saturation point can include judgment calls on the part of the researcher (e.g., when a researcher believes that additional information will not result in new discoveries or that new information will not add new categories to the coding scheme)	✓	✓	
8	*Unexpected opportunities, challenges, and other events*	Unexpected opportunities (e.g., access to additional sources of data), challenges (e.g., a firm's unit declines to participate in the last data collection stage and is replaced by a different one), and events (e.g., internal and	… the way in which researchers react and actions they take in response to these unexpected events affect data collection and subsequent conclusions	✓	✓	

ID	Transparency criterion	Definition	Criterion is necessary for replicability because...	Exact replication	Empirical replication	Conceptual replication
		external changes such as a new CEO or changes in market conditions during the study) that occur during all stages of the research process (Dexter, 1970; Harvey, 2010; Ostrander, 1993)				
9	*Management of power imbalance*	The differential exercise of control, authority, or influence during the research process (Ostrander, 1993; Thomas, 1993)	… it allows other researchers to adopt similar strategies (e.g., endorsement from a prestigious institution, self-acquaintance, asking sensitive questions) that affect the type of information gathered as well as a study's conclusions	✓	✓	
10	*Data coding and first-order codes*	The process through which data are categorized to facilitate subsequent analysis (e.g., structural coding, descriptive coding, narrative coding) (Maxwell & Chmiel, 2014; Saldana, 2009; Strauss & Corbin, 1998; Taylor, Bogdan, & DeVault, 2016)	... it allows other researchers to follow similar procedures and obtain similar conclusions	✓	✓	
11	*Data analysis and second- and higher-order codes*	The classification and interpretation of linguistic or visual material to make statements about implicit and explicit dimensions and structures (Flick, 2014) and it is generally done by identifying key relationships that tie the first order codes together into a narrative or sequence (e.g., pattern coding, focused coding, axial coding) (Saldana, 2009; Taylor et al., 2016)	... it allows other researchers to use a similar analytical approach and obtain similar conclusions	✓	✓	
12	*Data disclosure*	Raw material includes any information collected by the researcher before any manipulation (i.e., analysis) (e.g., transcripts, video recordings) (Ryan & Bernard, 2000; Schreiber, 2008)	… others can reuse the original material and attempt to obtain the same results and reach the same conclusions	✓		

Appendix 3: Participant consent form

Information für Teilnehmer an der Studie *"Social aspects of business failure"*

Mein Name ist Ilka Heinze und ich bin Promovendin im Promotionsstudiengang Betriebswirtschaft und Management (Ph.D.), den die HFH · Hamburger Fernhochschule in Kooperation mit der Universität Kaposvár in Ungarn durchführt. In meiner Dissertation beschäftige ich mich mit sozialen Aspekten des unternehmerischen Scheiterns.

Im Rahmen meiner Studie geht es darum, wie (ehemalige) Unternehmer das Scheitern von Projekten oder gar des gesamten Unternehmens erlebt haben und wie sie auf Basis dieser Erfahrung lernen bzw. umdenken.

Für diese Studie suche ich freiwillige Teilnehmer, die für ein Interview zur Verfügung stehen. Dabei gelten keine speziellen Auswahlkriterien (z. B. in Bezug auf Alter, Geschlecht, Bildung etc.), jede Person mit der persönlichen Erfahrung des unternehmerischen Scheiterns ist zur Teilnahme eingeladen.

Jeder Teilnehmer bzw. jede Teilnehmerin werden gebeten, Erfahrungen zum Scheitern und zu damit zusammenhängenden veränderten Überzeugungen, Annahmen und Vermutungen zu teilen. Aus Sicht der Forscherin beinhalten die Interviewfragen keinerlei psychische oder andere Risiken für die Studienteilnehmer. Das Interview sollte nicht länger als 120 min beanspruchen. Jeder Teilnehmer bzw. jede Teilnehmerin können die Teilnahme an der Studie zu jeder Zeit, und ohne Angabe von Gründen, beenden.

Alle Daten werden anonym ausgewertet, die – möglicherweise anhand der Stimme identifizierbaren – Tonaufnahmen werden unter Verschluss aufbewahrt und sind nur der Forscherin selbst zugänglich. Alle Teilnehmernamen werden durch Pseudonyme oder Teilnehmernummern ersetzt, damit eine Identifikation im Rahmen von Berichterstattungen oder

Veröffentlichungen sicher ausgeschlossen werden kann. Alle Daten werden an einem sicheren Ort (abgeschlossener Schrank in einem abgeschlossenen Raum und auf einem mit Passwort gesicherten Laptop), zu dem nur die Forscherin selbst Zugang hat, aufbewahrt. Nach der Examination werden alle Daten, mittels derer die Teilnehmer identifizierbar wären, gelöscht bzw. vernichtet.

Die Ergebnisse der Studie sollen in einem Fachbeitrag veröffentlicht und auf Konferenzen präsentiert werden.

Bei Fragen steht Herr Professor Gunnar Siemer, HFH Hamburg, als unabhängige, mit dem Projekt vertraute Person jedem Teilnehmer bzw. jeder Teilnehmerin als Ansprechpartner zur Verfügung.

Jeder Teilnehmer bzw. jede Teilnehmerin werden gebeten, nach der Kenntnisnahme der vorliegenden Information die beiliegende Einverständniserklärung zu unterzeichnen.

Einwilligung

Teilnahme an der Studie *"Social aspects of business failure"*

Ich habe das Informationsblatt sowie die Einwilligung gelesen und verstanden. Mir wurde ausreichend Gelegenheit gegeben, Fragen zu meiner Teilnehme zu stellen.

Mir ist bewusst, dass ich nicht verpflichtet bin, an der Studie teilzunehmen.

Mir ist außerdem bewusst, dass ich mein Einverständnis jederzeit ohne Angabe widerrufen kann.

Hiermit bestätige ich mein Einverständnis zur Teilnahme an der Studie.

Name des Teilnehmers/der Teilnehmerin:

_____

Unterschrift des Teilnehmers/der Teilnehmerin:

_____

Unterschrift der Forscherin:

_____

Datum: _____

Kontaktdaten: Ilka Heinze
Arnimstraße 7, 13053 Berlin

Appendix 4: Interview schedule

	Interview Schedule
1	Tell me about yourself (age, profession, family, education, recent position)
2	Tell me about your venture … *Prompts:* *How/why did you start?* *Has it been your own idea or have you been influenced (family, friends, colleagues, teachers)?* *How did the failure happen? Why? When?*
3	What did the failure mean for your social relationships? *Prompts:* *Who has been affected?* *What did it mean for you?* *What emotions have been involved?* *What did happen to you?*
4	"Failure is the best way to learn" – what do you think about that? *Prompts:* *Did you learn from failure?* *What? How?* *If not – why not?* *Are there any values, doctrines, routines that you have changed now?*
5	Are you a different person now? *Prompts:* *Are there positive aspects?* *What kind of advice do you have for budding entrepreneurs?*

Appendix 5: Table of Q-sort statements

#	Statements
1	Fail fast, fail often.
2	Be open about results, learning may be an achievement of failure.
3	Learning works best with people you get along with well
4	For learning to take place, I need to reflect upon the failure.
5	Unpleasant events (such as failure) are important learning experiences.
6	At the end, I can only trust myself.
7	Things need their time; short-term perspectives do not help.
8	Consistent structures / agreements / contracts are important.
9	I learnt to recognize excessive demand.
10	I know about my strengths and weaknesses and in future, I choose partners according to it.
11	Every conversation about the failure leads to new questions and this is how I learn.
12	Learning is a process that takes time.
13	I lost my sense of ease; I now look for more safety.
14	I am more afraid to lose control.
15	I have never felt more freedom and readiness to take up the fight as I have nothing to lose anymore.
16	I do not ignore my negative thoughts; I will rather do something with my negativity.
17	The failure helped me to learn about the venture, such as finances, leadership, marketing.
18	Before you start something new, you have to finish with the failure.
19	Enthusiastic about the business / profession let me start again.
20	I need some time to make sense of the failure.
21	Learning is to recognize conditions that are prerequisites for future success.
22	Learning takes place without actively dealing with the failure, i. e. by reading.
23	Motivation is a major prerequisite for all projects.
24	Never blame somebody for the failure, there are 1000 factors, but no one to blame for.
25	The worst thing to do after failure is to hide oneself.
26	If all goes well with first try, then it's luck alone.
27	In the event of crisis, I am stronger than I thought.
28	After failure, I just don't get it anymore.
29	I am just grateful I did overcome the failure event.
30	I can learn more from failure as from success.
31	Keeping a diary is a good method to learn from failure.
32	To recognize I did something right (despite the failure).
33	Feedback extremely supports learning from failure.
34	You have to face your anxieties, to look where it hurts.

#	Statements
35	Failure needs a closing, such as a speech, presentation, meeting with persons concerned.
36	A crisis is an opportunity and shows areas for growth and development.
37	Look for people who are already there where you would like to be.
38	Motivational books, podcasts or videos support my sense-making.
39	When climbing a rock, I need to have safety devices.
40	New projects have to be approached in a systematic manner.
41	You have to figure out the bad ingredients, why the dough didn't rise.
42	Perfectionism leads to failure (mostly).
43	Not try to do it all on my own, rather I should work together with professionals.
44	It hurts to deal with the failure.
45	Learning is supported by a positive stance on the future.
46	At graduate school / university there is not enough opportunity to deal with failure.
47	A lot of learning happens intuitively, I do not really think about it.
48	I do not make commitments anymore.
49	The failure is my enemy which I will defeat and hence growth from the battle.
50	It is better to fail than not to try at all.
51	The most important thing is that no third party will get damaged.
52	Learning from failure happens first through process routines and later intuitively.
53	Factual accurate decision can at the same time be emotional wrong.
54	Friends often do not tell the truth after failure.
55	I have learnt to recognize early warnings and I am prepared to act in a more pro-active manner
56	Failure is a catalyst for new energy.
57	My social environment has changed; true friends are still with me.
58	Sometimes I have experienced paralyzing self-doubts.
59	You have to accept that it's over now.
60	Failure is not a prerequisite for success.

Appendix 6: Table of Q sort factor scores

#	F1	F2	F3	F4
1	-3	-6	1	-3
2	1	-2	1	1
3	-5	-1	-4	4
4	4	0	-1	2
5	4	2	4	3
6	-6	-5	3	0
7	1	0	-2	-5
8	0	5	0	2
9	3	6	2	-1
10	2	4	3	-2
11	4	-2	2	0
12	5	1	-1	2
13	-3	-1	-6	-4
14	-5	4	-4	-6
15	-4	-3	3	0
16	3	1	1	4
17	-2	0	0	-3
18	-1	0	2	0
19	0	1	5	3
20	-2	2	-1	0
21	4	0	0	-1
22	-4	-3	-4	1
23	5	5	6	5
24	1	-2	5	-4
25	3	2	6	-2
26	-5	-6	-3	-3
27	1	-3	-2	6
28	-4	3	-5	-4
29	0	3	-4	-1
30	1	-2	1	0
31	-2	-4	-5	1
32	2	5	2	1
33	6	2	2	2
34	2	0	3	4
35	-3	-1	-3	-2
36	-1	-3	0	5
37	1	2	-3	1

#	F1	F2	F3	F4
38	3	-4	-5	-1
39	0	4	-3	-4
40	2	4	4	3
41	2	1	0	-2
42	-4	-4	-1	-6
43	-2	3	-2	-3
44	-1	1	0	-1
45	3	2	4	5
46	0	0	-1	-3
47	-3	-5	4	-2
48	-6	-4	-2	-5
49	-2	-2	0	-1
50	6	-1	5	6
51	-1	3	-2	2
52	0	0	-3	3
53	0	1	2	0
54	-2	-2	-2	-5
55	5	-1	1	1
56	-1	-5	-1	4
57	-3	-3	1	2
58	-1	3	-6	0
59	0	-1	0	3
60	2	6	3	-2

distinguishing factors

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