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Entrepreneurial Cognition and Well-Being in Early-Stage Ventures

Aishwarya Kakatkar

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Vorsitzende: Prof. Amy Zhao-Ding, PhD

Prüfer der Dissertation:

1. Prof. Dr. Dr. Holger Patzelt

2. Prof. Dr. Marc Gruber

3. Prof. Dr. Mirjam Knockaert

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Table of Contents

List of Figures

List of Tables

List of Abbreviations

BCERC	Babson College Entrepreneurship Research Conference
BEST	Building Entrepreneurial Success Teams
Dr.	Doctor
e.g.	Exempli gratia (for example)
ERI	Entrepreneurship Research Institute
et al.	Et alii (and others)
i.e.	Id est (that is)
M	Mean
PhD	Doctor of Philosophy
Prof.	Professor
SD	Standard deviation
SE	Standard error
TUM	Technical University of Munich

Abstract

This dissertation presents three essays that examine entrepreneurial cognition and well-being in early-stage ventures. Using qualitative and quantitative approaches, the dissertation investigates the dynamic process of entrepreneurial team ideation, the relationship between entrepreneurial team narratives and a founder's trust in the team, and how founders may develop entrepreneurial fatigue. The dissertation contributes to entrepreneurship research and management literature more generally.

Zusammenfassung

Diese Dissertation behandelt die Kognition und das Wohlbefinden Gründender. Durch verschiedene methodische Ansätze untersucht die Dissertation die Entwicklung unternehmerischer Ideen in Gründungsteams, die Beziehung zwischen unternehmerischen Teamnarrativen und dem Vertrauen der Gründenden in das Team und schließlich die Entwicklung unternehmerischer Erschöpfung. Die Dissertation leistet einen Beitrag zur Entrepreneurship-Forschung und der Management-Literatur.

1 Introduction

1.1 Conceptual Background

Over the past decades, entrepreneurship research has continued to gain recognition as a distinct field of research (Shane & Venkataraman, 2000; Shepherd, Souitaris, & Gruber, 2021). One of the key streams within entrepreneurship research that has received increasing attention over the past years is entrepreneurial cognition. In general, entrepreneurial cognition may be defined as "the knowledge structures that people use to make assessments, judgments, or decisions involving opportunity evaluation, venture creation, and growth" (Mitchell et al., 2002, p. 97). Studying entrepreneurial cognition can provide insights into processes central to entrepreneurship, such as how founders identify entrepreneurial opportunities and develop an understanding of the new venture environment (Mitchell et al., 2007; Shepherd & Patzelt, 2018). Moreover, early-stage ventures offer a unique research context for making valuable theoretical contributions to wider management research on cognition. In contrast to managers in established organizations, early-stage founders deal with particularly high levels of uncertainty and resource scarcity, with their ventures typically lacking established norms and modes of organizing (Shepherd et al., 2021; Vandenbroucke, Knockaert, & Ucbasaran, 2016). Thus, studying entrepreneurial cognition in early-stage ventures can help scholars to not only advance the field of entrepreneurship research, but also to extend general management theories.

While entrepreneurial cognition has most commonly been studied in the extant literature at the individual level, entrepreneurship scholars are increasingly recognizing the importance of studying entrepreneurial cognition in the context of entrepreneurial teams, "the group of individuals that is chiefly responsible for the strategic decision making and ongoing operations of a new venture" (Klotz, Hmieleski, Bradley, & Busenitz, 2014, p. 227). Many new ventures are founded by teams, rather than single founders, and studying entrepreneurial cognition in this context can therefore provide valuable insights into new venture development (Bjornali, Knockaert, Foss, Leunbach, & Erikson, 2017; Lazar et al., 2020). Entrepreneurial team cognition may be defined as:

> "An emergent state that refers to the manner in which knowledge is mentally organized, represented and distributed within the team and allows entrepreneurial team members to approach problem-solving and make assessments, judgments or decisions concerned with milestones and outcomes relevant to the entrepreneurial process, such as identifying and evaluating different opportunities, or defining and implementing launch and growth strategies" (de Mol, Khapova, & Elfring, 2015, p. 243).

Crucially, studying entrepreneurial team cognition requires going beyond directly transferring insights from the individual level to the team level (de Mol et al., 2015; West, 2007). This

dissertation's first essay addresses this issue by investigating the dynamic process through which individual-level cognitive inputs may be compiled by the team during entrepreneurial ideation, an activity central to the study of entrepreneurship (Barreto, 2012; Klotz et al., 2014; Lazar et al., 2020; Wright & Phan, 2020). Moreover, theory on entrepreneurial team cognition can be advanced by understanding how team members construct their individual social reality within the team in relation to each other, for instance, as reflected by entrepreneurial team narratives, stories told by the founder about the entrepreneurial team (Ashforth, Rogers, & Corley, 2011; Ibarra & Barbulescu, 2010). Thus, this dissertation's second essay investigates entrepreneurial team narratives and how they relate to a founder's cognition-based trust in the team.

Founding a venture can be a deeply personal activity (Powell & Baker, 2017; Rouse, 2016), such that the psychological and emotional experiences associated with engaging in entrepreneurship can significantly impact a founder's cognitive processes (Shepherd & Patzelt, 2018). In particular, an important concept related to entrepreneurial cognition is that of entrepreneurial well-being, "the experience of satisfaction, positive affect, infrequent negative affect, and psychological functioning in relation to developing, starting, growing, and running an entrepreneurial venture" (Wiklund, Nikolaev, Shir, Foo, & Bradley, 2019, p. 579). Much of the work on entrepreneurial well-being has highlighted the positive, energizing aspects of founding a venture because entrepreneurial work allows founders to fulfill basic psychological needs for autonomy, competence, and relatedness (Nikolaev, Boudreaux, & Wood, 2020; Shir, Nikolaev, & Wincent, 2019). However, more recently, scholars have begun to recognize and call attention to the hitherto underexplored negative psychological and emotional reactions of founders to engaging in entrepreneurship (Shepherd, 2019; Wiklund et al., 2019). Understanding these negative reactions is important since they can not only hurt a venture's performance, but also cause much suffering for founders (Stephan, 2018). While recent studies have begun to provide valuable insights into this dark side of entrepreneurship (Kollmann, Stöckmann, & Kensbock, 2019; Murnieks et al., 2019), much of the focus has been on the outcomes rather than the underlying mechanisms. My dissertation's third essay addresses this issue by building theory on the dynamics through which founders develop persistent and extreme exhaustion when engaging in entrepreneurial activities for the venture – a concept I refer to as entrepreneurial fatigue. In this essay, I also discuss how founders may recover from entrepreneurial fatigue, as well as avoid developing entrepreneurial fatigue in the first place.

Taken together, my dissertation focuses on advancing our understanding of entrepreneurial cognition, as well as the related concept of entrepreneurial well-being, in the

context of early-stage ventures. Additionally, the dissertation offers practical implications for founders and other stakeholders within the new venture ecosystem.

1.2 Specific Research Problems and Objectives

In the following, I discuss the specific research problems and objectives of the three essays in this dissertation. Each of the essays provides insights into founders' cognitive and psychological processes at different points along the entrepreneurial journey.

First, understanding how entrepreneurial teams identify new entrepreneurial ideas is a central topic in entrepreneurship research (Barreto, 2012; Klotz et al., 2014; Lazar et al., 2020; Wright & Phan, 2020). Several studies suggest that teams combine inputs from individual team members, for instance, information derived from co-founders' prior experiences, to identify and evaluate entrepreneurial ideas (Fern, Cardinal, & O'Neill, 2012; Gruber, MacMillan, & Thompson, 2008, 2012, 2013; Healey, Bleda, & Querbes, 2021). Much of the extant literature shows team members' combined inputs facilitate entrepreneurial team ideation by drawing on the implicit assumption that team-level outcomes are composed of aggregations of individual-level contributions (de Mol et al., 2015). Yet this approach is problematic, since it ignores that (1) team members may share their information in an incomplete or biased form (Brodbeck, Kerschreiter, Mojzisch, & Schulz-Hardt, 2007), and (2) the team's compilation of individual-level inputs into entrepreneurial ideas likely involves a complex process in which teams synergistically combine individual-level inputs, such as co-founders' information (Harvey, 2014; Harvey & Kou, 2013). Both of these issues can be addressed by studying entrepreneurial team ideation through a *compilation-based* perspective, which sees higher-level team constructs as deriving from a complex compilation of individual team members' inputs, such as the information shared by team members within the team (Kozlowski & Klein, 2000; Mathieu, Tannenbaum, Donsbach, & Alliger, 2014). My objective in the first essay is therefore to apply a compilation-based perspective to uncover the micro-level mechanisms underlying the complex process whereby individual team members' inputs shape entrepreneurial team ideation through information sharing.

Second, while the prior study investigates how entrepreneurial teams identify new venture ideas, trust among team members is critical for the future effective functioning of the entrepreneurial team (De Jong, Dirks, & Gillespie, 2016; De Jong & Elfring, 2010). Therefore, in the second essay, I explore what factors might influence a founder's trust in their entrepreneurial team. In general, extant literature provides only limited insights into the antecedents of a founder's trust in the team (Fulmer & Gelfand, 2012). Research on trust in entrepreneurial teams suggests pre-team formation factors, such as shared history and similar

member backgrounds, positively influence a founder's trust in their team (Beckman, Burton, & O'Reilly, 2007; Eisenhardt & Schoonhoven, 1990). However, given the dynamic nature of the new venture context, such pre-team formation factors likely become less important for trust than the hitherto underexplored post-team formation factors, such as those emerging from ongoing interactions within the team after the team has started working together (De Jong, Kroon, & Schilke, 2017; Fulmer & Gelfand, 2012). My objective in the second essay is to take a social information processing perspective to investigate the role of entrepreneurial team narratives as a resource for building a founder's cognition-based trust in the team.

Finally, whereas the prior two studies provide insights into how entrepreneurial teams can successfully navigate the entrepreneurial journey, the third essay in this dissertation focuses on the negative aspects of the founding experience, which may in extreme cases even lead to the founder ending the entrepreneurial journey altogether. Indeed, recent research has highlighted the need for better understanding the well-being of founders – particularly founders' negative psychological and emotional reactions to entrepreneurship (Shepherd, 2019; Wiklund et al., 2019). Feeling energy in connection with the venture is a core aspect of a founder feeling psychologically well (Ryan & Frederick, 1997). While founders might initially feel a high level of energy for their venture, over time, some founders develop a condition we term entrepreneurial fatigue, a persistent and extreme exhaustion when engaging in entrepreneurial activities for the venture. However, extant literature on the potential negative psychological and emotional reactions from engaging in entrepreneurial action has mostly focused on the outcomes (for an overview, see the meta-analysis by Lerman, Munyon, and Williams (2020)), rather than the underlying mechanisms and dynamic development of these reactions. My objective in the third essay is to investigate how and why entrepreneurial fatigue develops over time, as well as how founders can refuel their energy for the venture and how a lack of recovery shapes the founders' engagement with their venture.

1.3 Datasets and Methodological Approaches

To address the research problems and objectives detailed above, the essays in this dissertation apply diverse methodological approaches. I chose each methodological approach by taking into account the nature of the essays' respective research questions, as well as the state of the theory in the corresponding extant literature (Edmondson & McManus, 2007). All the data used in this dissertation draws from the larger Building Entrepreneurial Success Teams (BEST) project led by Holger Patzelt and Nicola Breugst over the course of multiple iterations at the Technical University of Munich (TUM) Entrepreneurship Research Institute (ERI), with the most recent iteration being funded by the Joachim Herz Stiftung. In general, the BEST

project aimed to explore a variety of topics associated with the functioning of entrepreneurial teams and involved the collection of both quantitative and qualitative data.

In the first essay, I sought to apply a compilation-based perspective to investigate the micro-level dynamics of entrepreneurial team ideation. Given the importance of drawing on rich data, ideally of complete teams interacting in real-time, for this kind of analysis, I took a qualitative, inductive approach to study video data on 20 early-stage entrepreneurial teams in a lab-style setting, which was collected by Daniel Schmelzer and Matthias Ballweg during their doctoral studies at TUM ERI as part of an early iteration of the BEST project. The teams worked through the same fictitious entrepreneurial ideation task based on information stimuli distributed at the start among the members. This unique video dataset allowed me to observe how information stimuli moved in and out of each team's focus during ideation. As is typical with inductive research (Edmondson & McManus, 2007; Langley, 1999), my data analysis followed an iterative process consisting of noting initial observations of the patterns characterizing entrepreneurial ideation in each team, which were later organized into first-order concepts that could be clustered into second-order themes and aggregate dimensions. Coding the videos concurrently with the development of the codes themselves eventually resulted in a final data structure, which I drew upon to iteratively develop an overall dynamic model of entrepreneurial team ideation. During this process, it became increasingly apparent that teams shifted between different modes of building ideas. This led to further theory building around the specific micro-processes of building ideas in entrepreneurial teams.

In the second essay, I aimed to study the relationships between entrepreneurial team narratives and a founder's trust in the entrepreneurial team. In line with extant work suggesting the role of entrepreneurial narratives as resources for founders to make sense of social relationships within the venture, I focused on investigating the structural dimensions of entrepreneurial team narratives to derive insights on how team members process social information in relation to each other. I drew upon extant literature on trust and entrepreneurial narratives, applying a social information processing perspective to deductively derive hypotheses on the relationships between the structural dimensions of entrepreneurial team narratives and a founder's cognition-based trust in the team. To test these hypotheses, I analyzed interview and survey data collected from 102 founders across 43 complete entrepreneurial teams as part of the most recent iteration of the BEST project by my fellow doctoral students Carolin Feldmeier, Max Haase, Friedrich Tacke, and I. To derive the structural dimensions of the entrepreneurial team narratives for each team from the interviews, I applied a novel, automated topic modeling approach, which had the advantages of improved replicability of

results, scalability to larger datasets, and minimizing the influence of human biases in analyzing narratives (Hannigan et al., 2019). Meanwhile, I measured all the other variables using established scales (e.g., McAllister's (1995) six-item cognition-based trust scale). To account for the measurement of the dependent variable, cognition-based trust, on a Likert-type scale of 1 to 7, I used censored regression models (lower limit: 1, upper limit: 7) and ran multiple robustness checks to test the hypotheses.

Finally, in the third essay, I mainly sought to understand how and why founders develop entrepreneurial fatigue over time. Since entrepreneurial energy and fatigue are nascent topics in extant literature, I apply a qualitative methodology (Edmondson & McManus, 2007). In particular, the open-ended, inductive approach I took in this essay aimed to disentangle the dynamics and underlying mechanisms through which founders develop entrepreneurial fatigue over time, with a particular focus on causal links and potential temporal feedback loops that explain transitions between energy states. As with the prior study, all of the data used in this essay was collected by Carolin Feldmeier, Max Haase, Friedrich Tacke, and I during the latest iteration of the BEST project. Specifically, I drew on longitudinal data on 38 founders from 14 early-stage ventures collected over a 16-month timeframe, consisting of a total of 78 semi-structured interviews. To supplement the interviews and allow for data triangulation (Jick, 1979), I also collected observational notes from my on-site visits at the founders' ventures, as well as secondary data on the ventures and their founders (e.g., via newspaper articles and LinkedIn profiles). This rich data collection helped me to understand when and how key events progressed over the course of the study period, allowing me to develop detailed timelines for each of the founders, which mapped changes in energy states, such as the onset of entrepreneurial fatigue, to events taking place within each founder's environment, as well as the founder's reactions to these events. Circling between these timelines and the raw data, I developed first-order concepts, second-order themes, and aggregate dimensions over the course of multiple iterations. From this emergent data structure and the coding of the data, I derived a dynamic model of entrepreneurial fatigue.

1.4 Dissertation Structure and Overview

This dissertation is structured around the three essays shown in Table 1. First, I present the essay on applying a compilation-based perspective to study the dynamic process of entrepreneurial team ideation (Chapter 2), second, the essay on the relationship between entrepreneurial team narratives and a founder's trust in the entrepreneurial team (Chapter 3),

and third, the essay presenting a dynamic model of entrepreneurial fatigue (Chapter 4).[1] Finally, I conclude by summarizing the overall findings and contributions of the dissertation, as well as discussing potential avenues for future research (Chapter 5).

Table 1. Summary of the three essays presented in this dissertation

Essay	Research Questions	Methodology	Submission History
Essay I (Chapter 2)			
Towards a Compilation-Based Perspective of Entrepreneurial Team Ideation	What are the micro-level mechanisms of information sharing and processing through which team members' inputs shape entrepreneurial team ideation? How do these mechanisms shape the team's building of new entrepreneurial ideas?	Qualitative, inductive approach to analyze a unique video dataset of 20 complete entrepreneurial teams engaged in a new venture ideation task in a lab-style setting.	Previous version by Kakatkar, A., Patzelt, H., & Breugst, N. was published in the Academy of Management Proceedings (2021). Current version by Kakatkar, A., Patzelt, H., & Breugst, N. under review at Organization Science.
Essay II (Chapter 3)			
Trust in Entrepreneurial Teams: The Role of Entrepreneurial Team Narratives	To what extent do entrepreneurial team narratives influence a founder's trust in their team?	Automated topic modeling approach to quantitatively analyze interview and survey data from 102 founders across 43 complete entrepreneurial teams.	Previous versions by Kakatkar, A., Patzelt, H., & Breugst, N. were published in the Academy of Management Proceedings (2020) and presented at the Babson College Entrepreneurship Research Conference (BCERC, 2020), as well as the 23rd Forum Gründungsforschung (G-Forum, 2019). Current version by Kakatkar, A., Patzelt, H., & Breugst, N. under review at Journal of Management.
Essay III (Chapter 4)			
Towards a Dynamic Model of Entrepreneurial Fatigue	How and why does entrepreneurial fatigue develop over time? How can founders refuel their energy for working on their venture and how does a lack of recovery shape a founder's engagement in the venture?	Qualitative, inductive approach applied to rich longitudinal data on 38 founders from 14 early-stage ventures over a 16-month timeframe.	Previous versions by Kakatkar, A., Patzelt, H., & Breugst, N. were published in the Academy of Management Best Paper Proceedings (2021) and presented at BCERC (2020). Current version by Kakatkar, A., Patzelt, H., & Breugst, N. under review at Journal of Business Venturing

[1] I write in first-person singular for ease of readability in Chapters 1 and 5 of this dissertation. Meanwhile, since the essays (Chapter 2-4) were co-authored with Holger Patzelt and Nicola Breugst, all three of these are written in first-person plural (i.e., "we").

2 Essay I: Towards a Compilation-Based Perspective of Entrepreneurial Team Ideation

Extant literature shows that the combined inputs of team members, such as their knowledge, experience, and cognitive skills, facilitate entrepreneurial team ideation. To do so, studies implicitly assume team-level outcomes are composed of aggregations of individual-level contributions. Yet this approach is problematic since it ignores that (1) team members may share their information in an incomplete or biased form, and (2) the team's compilation of individual-level inputs into entrepreneurial ideas likely involves a complex process. In this study, we apply a compilation-based perspective that addresses the above challenges and take a qualitative, inductive approach to analyze a unique video dataset of 20 complete entrepreneurial teams engaged in a new venture ideation task in a lab-style setting. Our data analysis uncovers the micro-level mechanisms underlying the complex process whereby individual team members' inputs shape entrepreneurial team ideation through information sharing. Our work advances theory on entrepreneurial ideation and has important implications for studying team cognition in both entrepreneurship and management research.

2.1 Introduction

Understanding how entrepreneurial teams identify new entrepreneurial ideas is a central topic in entrepreneurship research (Klotz et al., 2014; Lazar et al., 2020). Much of the extant literature aggregates team members' individual-level inputs to provide insights into entrepreneurial team ideation (de Mol et al., 2015). Several studies suggest that teams combine information from individual team members, for instance, based on co-founders' prior experiences, to identify and evaluate entrepreneurial ideas (Fern et al., 2012; Gruber et al., 2008, 2012, 2013; Healey et al., 2021). Different configurations of cognitive abilities within entrepreneurial teams may also influence ideation. For example, in a recent study, Kier and McMullen (2020) aggregate co-founders' entrepreneurial imaginativeness profiles and show how these may be linked to new venture ideation performance. Finally, Perry-Smith and Coff (2011) find that the effective generation and selection of ideas requires entrepreneurial teams to adopt different collective moods, conceptualized by averaging team members' individual-level moods. Overall, this literature shows team members' combined inputs facilitate entrepreneurial team ideation by drawing on the implicit assumption that team-level outcomes are composed of aggregations of individual-level contributions.

However, theoretical arguments suggest that this extant *composition-based* perspective, that is, conceiving a team-level construct as the aggregation (e.g., sum or average) of the

corresponding individual-level construct (Kozlowski & Klein, 2000; Mathieu et al., 2014) to investigate entrepreneurial team ideation may be problematic. First, team members may share their information with the team in an incomplete or biased form (Brodbeck et al., 2007). Assuming that the team can combine co-founders' information in its original form to facilitate ideation ignores the micro-level pre-processing that individual-level inputs may undergo prior to becoming available to the team, as well as the influence of this pre-processing on later stages of ideation. Second, teams synergistically combine individual-level inputs (Harvey & Kou, 2013; Okhuysen & Eisenhardt, 2002), such as co-founders' information, which may lead to wholly new pieces of information shaping team ideation. The complexity inherent in the team ideation process thus makes it problematic to consider ideation outcomes as merely deriving from the aggregation of individual-level inputs, and instead requires scholars to consider the micro-level mechanisms underlying the emergence of entrepreneurial ideas (de Mol et al., 2015; Harvey, 2014). In particular, we argue that theory on entrepreneurial team ideation may benefit from taking a *compilation-based* perspective, which sees higher-level team constructs as deriving from a "complex combination of diverse lower-level contributions [e.g., information shared by individuals]" (Kozlowski & Klein, 2000, p. 17), and may thus provide novel insights into how individual team member inputs influence the ideation process and its outcomes. These insights would open up a blindspot of research on entrepreneurial ideation that either assumes a single person as the idea originator or takes a composition-based perspective. Given that the emergence of entrepreneurial ideas is central to entrepreneurship research and that these ideas are often developed by teams (Lazar et al., 2020), this can substantially advance our understanding of how entrepreneurial ideas emerge. Guided by these considerations, in the current paper we therefore investigate the research questions: *What are the micro-level mechanisms of information sharing and processing through which team members' inputs shape entrepreneurial team ideation? How do these mechanisms shape the team's building of new entrepreneurial ideas?*

We take a qualitative, inductive approach, given the suitability of such methods for investigating micro-level dynamics (Edmondson & McManus, 2007). In a field setting, it is difficult to know what information is available at the individual-level – indeed, the individuals themselves may be unaware of the full set of information they are able to draw on (de Holan & Phillips, 2004; Dew, 2009). Therefore, we analyze a unique video dataset of 20 early-stage entrepreneurial teams in a lab-style setting working through a new venture ideation task based on information stimuli distributed at the outset. Applying a compilation-based perspective, our data analysis uncovers micro-level foundations of building new entrepreneurial ideas within the

entrepreneurial team context. The findings give rise to a dynamic, micro-level model demonstrating how team members' inputs interact to shape entrepreneurial team ideation, as well as how entrepreneurial teams build ideas based on complex, iterative information processing dynamics. Our work contributes to research on entrepreneurial team ideation and also has wider implications for developing compilation-based theory on team cognition in entrepreneurship and general management.

2.2 Theoretical Background

To develop new theory on entrepreneurial team ideation, we build on entrepreneurial ideation and team research. First, we discuss entrepreneurial ideation and how scholars have extended individual-level work in this domain to the level of the entrepreneurial team by taking a composition-based perspective. Then, we consider the challenges faced by the composition-based perspective and argue how they can be addressed by applying a compilation-based perspective to study entrepreneurial team ideation.

2.2.1 From Individual-level to Team-level Entrepreneurial Ideation

Entrepreneurial ideation refers to the process of building ideas for "new products, services, or ways of doing business" (Wood & Williams, 2014, p. 575) and has been studied at the level of individual founders in much of the extant entrepreneurship literature. These individual-level studies have offered valuable insights into the role of various factors shaping entrepreneurial ideation, such as a founder's prior knowledge and experience (Grégoire, Barr, & Shepherd, 2010; Gruber, 2010; Shane, 2000), as well as cognitive capabilities, such as entrepreneurial imaginativeness (Kier & McMullen, 2018), creativity (Shane & Nicolaou, 2015), and the use of frameworks, such as pattern recognition (Baron & Ensley, 2006). To extend these findings to the level of entrepreneurial team ideation, scholars have typically aggregated individual-level inputs. To study the influence of prior knowledge on the number and variety of venture ideas identified by entrepreneurial teams, Gruber et al. (2013) use aggregations, e.g., summing individual-level industry experience to arrive at the corresponding team-level construct. Similarly, in extending work on individual-level entrepreneurial imaginativeness (Kier & McMullen, 2018) to study its role in entrepreneurial team ideation, Kier and McMullen (2020) aggregate equally weighted individual-level profiles into team-level configurations of entrepreneurial imaginativeness. The wider management literature on teams terms this treatment of team-level constructs as aggregations (e.g., sum or average) of their corresponding individual-level constructs as the *composition-based* perspective (Kozlowski & Klein, 2000; Mathieu et al., 2014).

By taking a composition-based perspective, the entrepreneurial team ideation literature assumes individual-level factors translate directly to the team-level and can thus be aggregated to study team ideation outcomes. However, the wider management literature on teams and entrepreneurial team cognition scholars caution against relying solely on a composition-based perspective to study team processes (de Mol et al., 2015; West, 2007). In entrepreneurial team ideation research, two key challenges derive from adopting a composition-based perspective.

First, the composition-based perspective neglects that individual-level inputs are potentially *incomplete* and *biased* when communicated during entrepreneurial team ideation. Individual team members' inputs may be incompletely communicated when a team member shares only part of their insights with the team. In team decision-making studies, scholars observe that individuals filter information when sharing it within their team (Brodbeck et al., 2007). While an individual's motives for communicating incomplete information may be selfish, such as to align the team with the individual's own agenda (Wittenbaum, Hollingshead, & Botero, 2004), they may also be intended to improve team outcomes. For example, due to time and resource constraints typically faced by entrepreneurial teams, as well as the complex environments in which they may operate (Klotz et al., 2014), a co-founder might filter or emphasize particular aspects of information whilst sharing it with the team to focus the team's limited attention[2] and improve efficiency. Incomplete information sharing could also result from co-founders being prone to overoptimistically filtering out information that they consider irrelevant or contradictory (Hmieleski, Corbett, & Baron, 2013). Moreover, team members' inputs may be biased when entering the entrepreneurial team ideation process, since members may contextualize parts of their understanding whilst sharing it, by embellishing or emphasizing certain aspects of the information shared within the team. For instance, co-founders may bias the information they share with the entrepreneurial team by overemphasizing opportunities and downplaying risks (Cassar, 2010; Hmieleski et al., 2013).

Second, the composition-based perspective does not recognize and engage with the complex and dynamic process of combining team members' individual-level inputs into entrepreneurial team ideation outcomes (Harvey, 2014). For example, despite aggregating equally weighted individual-level profiles into team-level configurations of entrepreneurial imaginativeness, Kier and McMullen (2020, p. 13) admit that, "In practice, we know that team

[2] The term *team attention* refers to the team becoming aware of a piece of information. The term *team cognition* applies in situations when the team processes this information in a certain way (e.g., to build entrepreneurial ideas).

members do not contribute equally to team effectiveness as certain members (i.e., team leaders) may contribute more to team success while others (i.e., free riders) may contribute substantially less." Indeed, entrepreneurial team processes are highly collaborative (Lazar et al., 2020; Patzelt, Preller, & Breugst, 2020), such that team members build on each other's information through a series of interactions (Fern et al., 2012) and the influence of each member's information may vary over the course of the team's discussion (Brodbeck et al., 2007).

2.2.2 A Compilation-based Perspective on Entrepreneurial Team Ideation

Both challenges can be addressed by taking a *compilation-based* perspective, which sees higher-level team constructs as deriving from a complex compilation of individual team members' inputs, such as the information shared by team members within the team (Kozlowski & Klein, 2000; Mathieu et al., 2014).

To our knowledge, despite team researchers advocating the compilation-based perspective for quite some time, hardly any studies to date have actually applied it. Of the few studies applying the compilation-based perspective, many of these are conceptual (Baer, Dirks, & Nickerson, 2013; Felin & Zenger, 2009; Felps, Mitchell, & Byington, 2006; Harvey, 2014; Shalley & Perry-Smith, 2008). These studies highlight important aspects of how individual-level inputs contribute to the team level, such as the role of team members' heterogeneous information sets in leading to teams only discussing a narrow, subset of the available information (Baer et al., 2013). In doing so, this theoretical work emphasizes the importance of addressing the above-mentioned challenges deriving from the dominant composition-based approach to studying entrepreneurial team ideation, yet the micro-level mechanisms relevant to this context lack data-driven specification and support. Meanwhile, the few empirical studies that apply the compilation-based perspective are often quite context-specific (e.g., Ellis, Bell, Ployhart, Hollenbeck, & Ilgen, 2005; Hollenbeck, Ilgen, LePine, Colquitt, & Hedlund, 1998) and their insights are difficult to directly apply to entrepreneurial team ideation. For instance, many of these studies emphasize the disproportionate influence of some team members over others, due to their positions in the organization (Mathieu et al., 2014), yet entrepreneurial teams typically lack clear structures or hierarchies at the early stage of the venture development process in which entrepreneurial ideation takes place (Patzelt et al., 2020). Thus, despite their valuable contributions to team research, we cannot directly translate insights from existing compilation-based work to the entrepreneurial team ideation process. Nevertheless, as we detail below, studying this process through a compilation-based lens could address both of the previously described challenges created by the dominant composition-based perspective in current entrepreneurial team ideation research.

The compilation-based perspective addresses the challenge of incomplete and biased information sharing by considering the role of micro-level mechanisms shaping team members' inputs as these enter the entrepreneurial team ideation process (Brodbeck et al., 2007). Compilation differs from composition, in that it allows for – or even requires – a more nuanced translation[3] of the manifestations of team members' inputs (e.g., shared information) in the course of shaping entrepreneurial team ideation (Kozlowski & Klein, 2000; Mathieu et al., 2014; Morgeson & Hofmann, 1999). By explicitly considering this translation of team members' inputs to the team-level, the compilation-based perspective allows us to investigate the role of potentially incomplete and biased information sharing during entrepreneurial team ideation. This can help set the stage for theorizing about the complex micro-level processes through which such 'noisy' individual-level inputs may drive team-level ideation outcomes.

Rather than seeing entrepreneurial team ideation as merely deriving from an aggregation of individual-level inputs, the compilation-based perspective emphasizes that team-level outcomes emerge from continuous interactions between team members (Kozlowski & Klein, 2000; Mathieu et al., 2014; Morgeson & Hofmann, 1999) and thus explicitly considers the micro-level dynamics of entrepreneurial team ideation. The compilation-based perspective allows for a synergistic combination of individual-level inputs such as information, leading to potentially wholly new pieces of information being developed in the team interaction that can ultimately shape entrepreneurial team ideation (de Mol et al., 2015; Harvey, 2014). At the same time, the compilation-based perspective does not necessarily preclude a composition-based account of extending team members' inputs to the team-level and allows team members to artificially structure the ideation process in such a way as to equally draw upon members' individual-level information.

Based on these considerations, applying a compilation-based perspective is arguably crucial for entrepreneurial team ideation research and requires illuminating the micro-level mechanisms underlying the ideation process.

2.3 Method

One possible reason for the compilation-based perspective receiving little attention in extant entrepreneurship studies may be the relative empirical difficulty of applying the

[3] Both the composition-based perspective and compilation-based perspective consider different forms of translation of individual-level inputs to the team level. However, while the composition-based perspective makes simplifying assumptions to allow for direct or literal translation, the compilation-based perspective accounts for greater complexity by allowing for a more sophisticated, nuanced translation.

compilation-based perspective. In particular, applying the compilation-based perspective requires researchers to analyze rich data, ideally of complete teams interacting in real-time, which can be time-consuming and difficult to acquire. To address these challenges and given our interest in uncovering the micro-level mechanisms underlying the entrepreneurial team ideation process, we took an inductive, qualitative approach (Edmondson & McManus, 2007). We analyzed video data on 20 early-stage entrepreneurial teams in a lab-style setting working through the same fictitious entrepreneurial ideation task based on information stimuli distributed at the start among the members. This unique approach and dataset allowed us to observe how information stimuli moved in and out of each team's focus during ideation. Moreover, studying real entrepreneurial teams (rather than, say, randomly assigned student teams) preserved the real team dynamics and relationships (e.g., team cohesion, friendships between team members) in which micro-level dynamics of the emergent entrepreneurial ideas are situated.[4] In the following sections, we elaborate on how we sampled entrepreneurial teams, as well as collected and analyzed the video data.

2.3.1 Sample

To rely on a sample that could relate to the task well and connect it to their real world (Hsu, Simmons, & Wieland, 2017), we focused on early-stage entrepreneurial teams with some experience in ideation processes. Therefore, we sampled potential participants from business incubators in a European metropolitan area, since incubator ventures are typically early-stage and are often run by entrepreneurial teams (Ebbers, 2014; Hallen, Cohen, & Bingham, 2020). We identified 10 incubators for early-stage ventures and generated a list of 289 ventures that fit our sampling criteria. We invited the co-founders of these ventures to participate in a video-taped ideation task for about half an hour, ideally taking place within the team's own office space. Many were unable to participate, mainly due to time constraints or an unwillingness to be video-taped. Nevertheless, 64 ventures initially indicated their interest in participating in our study and the team members gave us initial interviews that helped us to understand them and their ventures' backgrounds. Due to logistical constraints, only 20 of these ventures (53 co-founders) ultimately participated in the task and were the focus of our study. Table 1 gives background information on these co-founders and their ventures.

[4] While this gave us unique and rich observational data of continuous team interactions, (as is always the case with observations) we could not capture the thoughts of team members at any point in time during their interaction.

Table 2. Background information on co-founders and their ventures

Team	Co-founder	Age	Gender	Educational Background	Prior Professional Background	Founded	Industry
A	Adam	35	Male	Computer science	IT/management in corporations and startups	2008	IT
	Allen	33	Male	Media design	–		
B	Ben	28	Male	Computer science	IT freelancer and founded a startup (same team)	2010	IT
	Brad	27	Male	Computer science	IT freelancer and founded a startup (same team)		
	Brian	26	Male	Computer science	IT freelancer and founded a startup (same team)		
C	Carla	30	Female	Mathematics/natural sciences	Biology research	2008	Biotech
	Chris	34	Male	Mathematics/natural sciences	Biology research		
D	Dan	31	Male	Engineering	3D modeling in established companies	2011	Services
	David	32	Male	Product design	Automotive and product design modeling		
	Dean	33	Male	Engineering and design	–		
E	Ed	28	Male	Business/economics	Product management in corporations and startups	2009	Consumer
	Elias	30	Male	Law	Co-founder of a previous startup		
F	Fiona	29	Female	Social sciences	Product marketing management and research	2010	IT
	Frances	36	Female	Social sciences	–		
	Freya	32	Female	Business/economics	Management consulting		
G	Gabriel	33	Male	Engineering	Engineering, research, and consulting	2010	Energy
	George	29	Male	Mathematics/natural sciences	Electronics research		
	Grant	30	Male	Engineering	Electronics research		
	Greg	30	Male	Engineering	Software engineering		
H	Hal	36	Male	Engineering	Co-founder of a previous startup (with Henry)	2003	Media
	Harvey	33	Male	Engineering	IT and project management in the media industry		
	Henry	34	Male	Business/economics	Innovation research & founded startup (with Hal)		
I	Ian	27	Male	Business/economics	Chief technology officer at previous startup	2008	IT
	Irvin	61	Male	Social sciences	–		
J	Jess	34	Female	Business/economics	Public relations and product management	2010	Consumer
	Jake	32	Male	Design	Industrial design		
K	Kevin	24	Male	Mathematics/natural sciences	–	2010	MedTech
	Kyle	23	Male	Business/economics	–		
L	Liam	28	Male	Business/economics	Controlling and investment management	2011	IT
	Luke	27	Male	Business/economics	Telecommunications and management research		
M	Marco	29	Male	Engineering	Aerospace engineering research	2011	Manufacturing
	Martin	28	Male	Engineering	–		
	Matt	37	Male	Engineering	Aerospace engineering research		
	Mike	–	Male	–	–		
	Miles	–	Male	–	–		
N	Nick	35	Male	Engineering	Research in mechanical engineering	2007	Services
	Noah	34	Male	Engineering	Research in engineering		
O	Owen	27	Male	Mathematics/natural sciences	Founder of a previous startup	2011	IT
	Olivia	23	Female	Law	Work experience in real estate and IT		
P	Phil	60	Male	Engineering	–	2000	IT
	Pam	52	Female	Engineering	–		
Q	Quentin	27	Male	Business/ economics	Co-founder of another startup (with E2)	2010	IT
	Quincy	29	Male	Business/ economics	Co-founder of another startup (with E1)		
R	Rhett	27	Male	Engineering	–	2009	Media
	Rob	28	Male	Engineering	–		
	Ryan	26	Male	Engineering	Software development for media		
S	Sam	30	Male	Engineering	Teaching, consulting, business development	2010	IT
	Stanley	30	Male	Business/economics	Strategy consulting		
	Steve	29	Male	Engineering	Computing research and founding another startup		
T	Ted	47	Male	Engineering	Engineering and leadership positions	2009	Media
	Tom	50	Male	Engineering	Engineering and leadership positions		

2.3.2 Data Collection

For the purposes of our study, collecting data on entrepreneurial team ideation in real time required (1) the co-founders to feel comfortable being video-taped and acting as they

normally would during team ideation, (2) achieving comparability across the teams in terms of the ideation task, and (3) recording high quality audiovisual footage to later analyze team interactions. Our primary source of data collection thus consisted of video recordings of each of the 20 entrepreneurial teams engaging in the same ideation task to allow for comaprability. Two graduate students, unaware of our study objectives, facilitated the ideation task. 16 teams completed the task at their own office (we provided meeting rooms on our university campus for the rest) so that, despite the artificial nature of the task itself, the teams felt comfortable, and we could observe entrepreneurial team ideation in the team's natural working environment. To avoid influencing the teams during the task, the graduate students left the room directly after giving instructions and handing out the information stimuli, only reentering to end the task after 20 minutes elapsed. The graduate students used the same set of scripted verbal instructions for all teams to ensure consistency. The video camera capturing the task was always placed in an unobtrusive corner of the room while keeping all the co-founders in focus. To fully capture larger teams, we used two cameras. To achieve clear enough audio quality, we placed a separate microphone near the co-founders to record the team's discussion.

Prior to beginning the ideation task, the graduate students briefly provided task instructions. The graduate students asked the teams once at the start to not be distracted by the video cameras[5], before explaining that they had brought an ideation case study and six cards, each with a different piece of information about the ideation context. The teams were told that the cards would be randomly distributed amongst the team members, such that each team member would only have part of the information. The teams were requested to not physically exchange the cards amongst themselves, but only to share the information through verbal conversation. The teams were also told that they were not being 'tested' on the outcome of the task, but should still act as if they were actually going to implement their chosen idea the next day. The graduate students then distributed the written task instructions and information cards amongst the co-founders and left the room. After exactly 20 minutes the graduate students reentered to end the task – regardless of whether the team had finished the task.

2.3.3 Team Ideation Task

In designing the ideation task, we first sought to place constraints to create a bounded setting for the team's creativity to emerge (Rosso, 2014). Second, we aimed to choose an

[5] The graduate students did not mention the video cameras again during their instructions to help the entrepreneurial teams forget the task was being recorded and to encourage them to act as they normally would during team ideation.

accessible ideation topic that would not demand extensive prior knowledge or technical expertise. Third, we needed a way of tracking individual-level informational contributions to the team-level ideation process. We thus designed the task to give each team 20 minutes to identify 3-5 new entrepreneurial ideas based on the information stimuli provided at the start, select the most promising of the identified ideas to pursue, and finally, plan its implementation. In doing so, we hoped to encourage teams to identify viable entrepreneurial ideas, rather than simply producing 'wild' ideas. By placing a time constraint, we sought to encourage the creativity of the participants to more clearly observe the micro-level mechanisms underlying the entrepreneurial team ideation; creativity studies suggest moderate levels of time pressure can increase teams' creativity (Baer & Oldham, 2006; Rosso, 2014). The 20-minute time constraint we applied is similar to the time allocated by group ideation and brainstorming studies in extant literature (Girotra, Terwiesch, & Ulrich, 2010; Kohn & Smith, 2011; Sosik, Avolio, & Kahai, 1998). Importantly, given our interest in information sharing and processing during team ideation, it was not necessary for our study that all teams indeed finished the task or achieved the best possible outcome.

The information stimuli received by each team consisted of six cards that provided information on the market for private events and family celebrations, such as birthdays and weddings (see Appendix 7.1.1). This relatively accessible topic was chosen since there is substantial variety in the types of private events that may be organized. The event industry is an area of vivid entrepreneurial activity (Kimball, 2011) and would be relatable to the study participants. In contrast to a field setting, our lab-style study meant that information had to be explicitly shared to contribute to team ideation, allowing us to track the introduction of each information stimulus. This was crucial for accounting for the role of incomplete or biased information sharing in the team ideation process. The information stimuli were distributed as equally as possible within each team at the start of the task. Although co-founders were instructed not to physically exchange their cards, they were allowed to verbally share the information (e.g., by reading it aloud).

2.3.4 Data Analysis

As is typical with inductive research (Edmondson & McManus, 2007; Langley, 1999), we followed an iterative process to disentangle the micro-level dynamics involved in co-founders' inputs shaping entrepreneurial team ideation. For ease of explication, we describe our data analysis as a series of steps, though in practice we iterated between these steps as demanded by the changes in our theory building. In our initial analysis of the video data, we noticed a general pattern of two phases characterizing entrepreneurial team ideation between which teams

could alternate: 1) co-founders bringing information to the team's attention to shape the ideation process, and 2) the team iteratively building ideas from the shared information. These phases helped us organize our observations into first-order concepts, enabling us to differentiate first-order codes such as "A co-founder showing enthusiasm for information while sharing", which seemed to fall under the first phase of information sharing, from first-order codes such as "Suggest and refine ideas by building off of each other's views and information". We were attentive to mechanisms that challenged our initial two-phase structure. For instance, we noticed some co-founders would spontaneously propose an idea to their team based on their information without first sharing the information itself. Dan from Team D said, "If I understand this correctly, we have information related to a business idea for an event agency or something like that." Based on such instances, we derived the first-order concept "A co-founder assuming team's information points to a certain idea." Our initial rounds of coding generated 27 first-order concepts. Critically assessing the relevance of these concepts to understanding the micro-level dynamics of entrepreneurial team ideation and considering how the first-order concepts related to one another led us to ultimately combine or eliminate codes to yield 18 final first-order concepts.

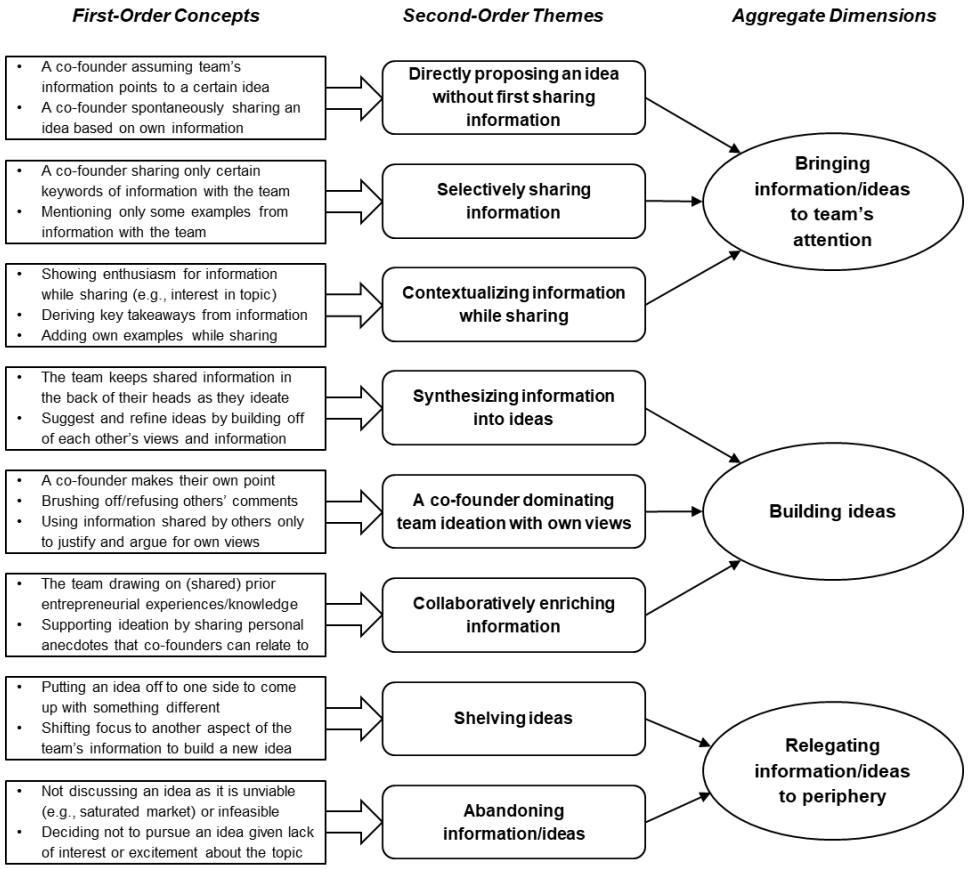
Next, we formed multiple clusters of first-order concepts that corresponded to similar micro-level mechanisms to let us abstract them into second-order themes. Though we started with six second-order themes, we circled between the data and our first-order concepts frequently to challenge and refine our emergent second-order themes. For example, we initially considered both the first-order concept "Adding own example while sharing" and "Supporting ideation by sharing personal anecdotes that co-founders can relate to" as belonging to the second-order theme "Contextualizing information while sharing." However, revisiting the data suggested that these two first-order concepts were situated in different parts of the entrepreneurial team ideation process. In particular, while the former occurred when co-founders initially shared their information with the team, the latter took place within the context of co-founders collaboratively building ideas from information already shared within the team. Therefore, we left "Adding own example while sharing" within the second-order theme "Contextualizing information while sharing," but reassigned the other first-order concept to the second-order theme "Collaboratively enriching information." Through such iterations, our final clustering yielded eight second-order themes.

We further abstracted and grouped these second-order themes into aggregate dimensions. We grouped second-order themes on how co-founders initially shared information, through selectively sharing or contextualizing while sharing or indirectly by spontaneously

proposing ideas; this gave rise to the aggregate dimension *Bringing information/ideas to the team's attention*. The rest of our second-order themes related to interactive micro-level dynamics shaping entrepreneurial team ideation. Situating these within the different role they played in the emergence of entrepreneurial ideas helped us to abstract the second-order themes "Synthesizing information into ideas," "A co-founder dominating team ideation with own views," and "Collaboratively enriching information" into the aggregate dimension *Building ideas*, which dealt with the role of micro-level mechanisms in the focus of the team cognition. We grouped the final two second-order themes "Shelving ideas" and "Abandoning information/ideas" into the aggregate dimension *Relegating information/ideas to periphery*, which concerned the micro-level mechanisms underlying how aspects of the team cognition moved out of the team's focus during the ideation process.

Using the developing set of first-order concepts, second-order themes, and aggregate dimensions, we coded the data for all the entrepreneurial teams concurrently with the development of the codes themselves, ultimately arriving at the data structure in Figure 1.

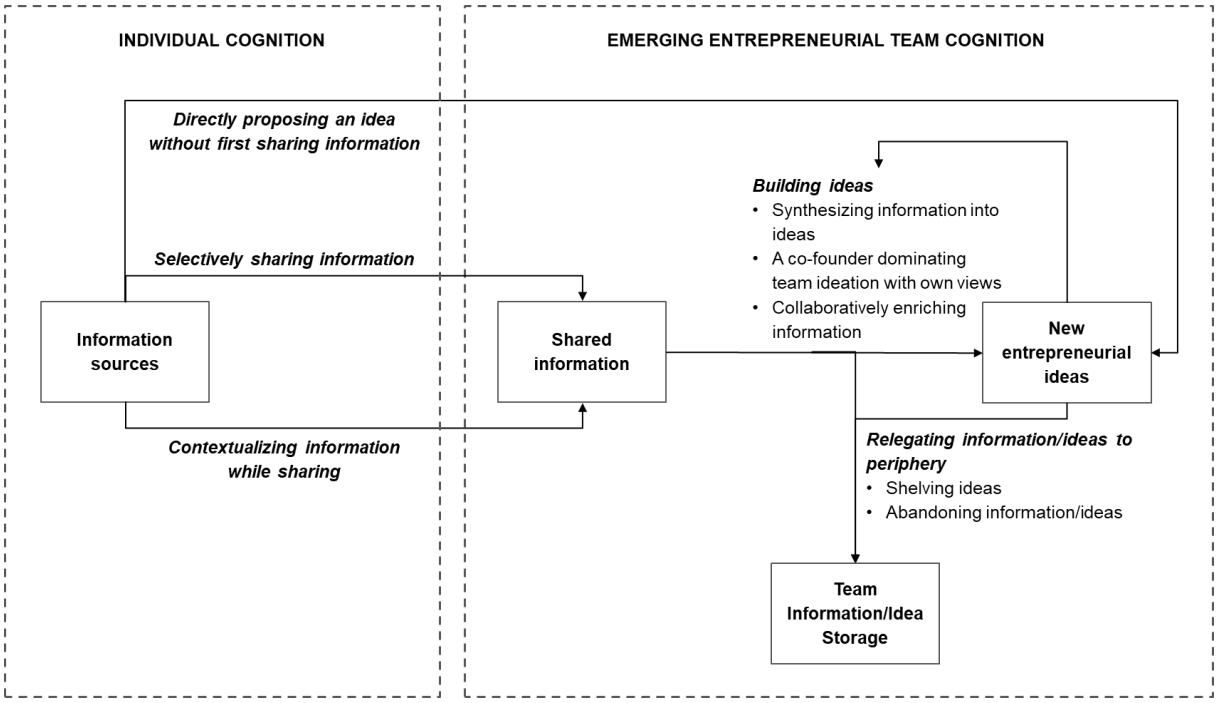
Figure 1. Data structure



Drawing on our emergent data structure, we iteratively developed a dynamic, micro-level model of entrepreneurial team ideation. We circled between each iteration of the model and our data to adapt and enrich our theory building until this process yielded no further

insights. During this process, it became increasingly apparent that not only did information and ideas move in and out of a team's focus, but teams also shifted between different modes of building ideas. We therefore studied the micro-processes through which teams moved between each of the three modes of building ideas. In the following section, we discuss each element of our overall model of entrepreneurial team ideation (Figure 2), as well as the micro-processes of building ideas (Figure 3).

Figure 2. Dynamic model of entrepreneurial team ideation



2.4 Findings

2.4.1 From Individual-level Inputs to Team Cognition

Co-founders differed in how they shared their individual-level information within the team during entrepreneurial ideation. Information sharing refers to the "conscious and deliberate attempts on the part of team members to exchange [task]-related information, keep one another apprised of activities, and inform one another of key developments" (Bunderson & Sutcliffe, 2002, p. 881). When sharing their information in the team, co-founders often somewhat changed their information in one or more of the following ways: (1) selectively sharing information, (2) contextualizing information while sharing it, and (3) directly proposing an idea without first sharing information.

First, we observed instances of co-founders selectively sharing information with the team. Typically, this involved a co-founder sharing only some keywords or examples from the information on their card. For instance, in team H, Henry said, "And here *[referring to Card 5]*

there is more of a demand-side perspective, which says that [customers] don't have the opportunity to inform themselves [about event services]." Card 5 actually provided more details, such as "For example, people searching for offers and support for their party have hardly any opportunities to draw on the experiences of customers outside of their own friend circles." As a result, even though Henry was aware of this additional information, it did not enter the team's attention and therefore could not contribute to how entrepreneurial team ideation developed. As another example, in Team J, Jess selectively shared the information on Card 1 by saying "It is about the fact that there are entertainers. There are many entertainers. Very few of them work with professional event or wedding planners." Jess did not mention the other details on Card 1, such as the point about these being entertainers "who specialize in family celebrations and parties," or that these entertainers "have hardly any opportunities to offer their services to a wide audience (outside of direct customer recommendations)." Thus, these pieces of unshared information could not contribute to shaping Team J's entrepreneurial team ideation.

Second, another way in which co-founders shared their information with the team involved contextualizing the information. This additional context could emerge through the co-founder linking some kind of emotionality to the information (e.g., expressing enthusiasm or disinterest), or in the form of content, such as deriving key takeaways for the team. For instance, in Team C, Carla read Card 3 aloud word for word and added, "So that's what it says. Also, I think that this is actually something that is already booming, but also I think we cannot create a second dating site like [Platform B]. If we were to do something with this – but I think this exists already – we would have to combine it with actual events." Thus, in sharing her information within her team, Carla provided additional context, which nudged the team towards thinking of the information in a way that emphasized the dominance of existing platforms in the online dating industry and the need for differentiation from these competitors. Similarly, in the case of Team F, immediately after reading out Card 1, Frances contextualized the information for the team by saying "This means, [entertainers] could be marketing themselves more." In this way, while contextualizing information typically does not involve co-founders suggesting an idea outright, it can direct entrepreneurial team ideation towards being shaped in particular way that might not have happened otherwise.

Finally, information could be shared indirectly by a co-founder spontaneously proposing an idea. For example, we observed the following sequence in Team D:

> Dan: OK, so we have received this information and we need to now identify a business idea, right?
> David: No, we need to all first share the information. I was thinking about whether we can develop something out of this. *[David looks down at his cards.]* So, I have –

Dan interrupts David.
Dan: If I understand this correctly, we have information related to a business idea for an event agency or something like that.
Dean: Right.
Dan: Exactly, so we three want to start an event agency and now we have to think about what kind of business model we have as an event agency.

As shown in this example, Dan spontaneously shared the idea of opening an event agency and directed the team's attention towards discussing the specific business model that such a venture would have. Interestingly, here, despite the objection raised by David, Dan also seemed to assume based on his own information that the team's information as a whole pointed towards the event agency idea. Thus, when a co-founder directly proposes ideas without first sharing information, apart from being an expression of spontaneity, for some co-founders, this behavior may also draw upon underlying assumptions that influence how these co-founders contribute their individual inputs to team cognition. Moreover, in our data, this approach of implicit information sharing through direct ideation tended to involve more dominant behavioral cues being displayed by the co-founder in question (e.g., Dan interrupting David in the above example). We also observed a co-founder directly proposing an idea without first sharing information in the case of Tom from Team T. He said, "One business idea is to film weddings from a bird's eye view with a quadcopter," without first sharing the underlying information for this idea, which was on Card 2.

These examples underscore that the way in which co-founders manipulate information (consciously or unconsciously) while sharing it with the team can influence subsequent steps in the ideation process. Thus, considering entrepreneurial team ideation with a composition-based perspective as emerging from merely the aggregation of shared information can result in suboptimal theorizing that misses the role of these initial information sharing mechanisms. Table 3 provides additional illustrative examples of the above three ways in which co-founders shared information within the team.

Table 3. Illustrative examples of information sharing within entrepreneurial teams during new venture ideation

Second-order theme	Illustrative examples
Directly proposing an idea without first sharing information	Team A Allen: So [based on what] I have here in [my] information, […] the first idea would be something like a location scout service. Team P Pam: Can I start? Phil: Sure, you can start. Pam: Because I would not pursue this idea. *[Pam and Phil both laugh.]* OK, so to start then, [the idea] is basically to organize church celebrations.

	Team R Ryan: It sounds like an event agency. *[This is the first thing Ryan says. No information has been shared by anyone yet.]* Team T Tom: [Another business idea] is on the topic of entertainers that have specialized in the area of family celebrations – to connect these people with professional wedding planners or event planners. *[Tom suggests this idea without sharing the information on Card 1.]*
Selectively sharing information	Team H Harvey: [My information] is about people really value capturing memories. *[Harvey leaves out the rest of Card 2, e.g., the context of weddings, the use of innovative technologies, such as quadcopters, etc.]* Team I Irvin: [This card] is about religious celebrations […] like confirmation, communion, baptism, bar mitzvah, festivals marking the end of fasting and the organizational – and then again some statistics. *[Irvin leaves out the rest of Card 6, e.g., the 180 private working hours that people invest into organizing these religious events.]* Team N Noah: My cards are generally about celebrations […] so *[Noah refers to Card 4]* there is a bit about what one is willing to pay, that there are few [event] venues, and *[Noah refers to Card 5]* that there is little experience [on event planning] that people can draw on from their friend circles. *[Noah leaves out nearly all of the details from Card 4 and Card 5.]* Team O Olivia: One [of my cards] is that many [people in Country X] want big celebrations for round-number birthdays and reaching the age of majority […] and the problem is that although people would be willing to pay a lot for that, there are hardly any suitable event venues. So, one doesn't know where to go, even though there are in theory lots of cool locations, like lakeside properties, estates, and castles, which are only seldom used for events. *[Olivia leaves out some details on Card 4, e.g., that people are on average willing to spend 40% of their monthly income on such events.]*
Contextualizing information while sharing	Team C Chris: So [my information] is about round-number birthdays and generally family celebrations. People are apparently willing to spend up to 40% of their income on this and with an annual gross domestic product of €29,000 per capita – the gross domestic product doesn't add up at all. These figures aren't going to help us at all are they? Team L Liam: So the first point, let's start with that. It is about weddings. There are a few numbers given. The average woman gets married at 30, the average man at 33. In 2010 there were on average 380,000 marriages. And many of those trace back to internet contacts established through platforms like [Platform A] or [Platform B]. So the message here is: relatively large market with internet affinity. Team N Nick: There is an issue of how many private working hours per event are put into religious festivals, and I find this quite interesting. […] And above all that if they are exotic celebrations – so I guess this would be something more like a bar mitzvah or a Turkish wedding – then the private working hours rise again by 40% because there is too little support for that in [Country X]. That would then definitely point towards there being a market gap for these matchmaking agencies for foreign citizens who strongly value the religious aspect [of private celebrations]. Team S Stanley: [I] have the point that if you are […] organizing a family event or your 30th birthday, you don't really find people that help you. Most of the time you rely on your friends and I think we did a pretty bad job of helping you *[speaking to Steve]*, so you need to be able to find friends that help you.

Finally, we consider alternative composition-based explanations for why team members might share their information in a particular way. Although the teams differed in the heterogeneity of backgrounds and competencies of their members, we did not find any clear influence of team members' backgrounds on how they shared information. For instance, both teams with heterogeneous team member backgrounds (e.g., Team J) and teams with homogeneous team member backgrounds (e.g., Team R) exhibited all three ways of adapting individual-level information when sharing it within the team. Moreover, even when team members had fairly homogeneous backgrounds or competencies, such as in the case of Nick and Noah from Team N, they nevertheless differed in how they shared their information within the team; Nick mainly contextualized his information while sharing it, while Noah selectively shared his information. This suggests that such composition-based explanations for how team members' individual-level information sources did not substantially shape entrepreneurial team ideation in our study.

2.4.2 From Shared Information to Ideas Emerging within the Team Cognition

Next, we studied how each idea was built up at the team-level. Our data suggested three different modes: (1) synthesizing information into ideas, (2) a co-founder dominating team ideation with their own views, and (3) through collaboratively enriching information. Overall, the teams in our setting developed 3.5 ideas on average, ranging from two to six per team. We did not find that the number of ideas generated in the team (and the average time a team spent on an idea) related to the type of mode used to build an idea.

Modes of building ideas in the entrepreneurial team. When co-founders synthesized information into ideas, they considered the information shared within the team in terms of how it could be compiled to allow new entrepreneurial ideas to emerge. For example, the following exchange took place in Team F:

> Fiona: If we were to mix all of this [shared information] together…
> Freya: Yes, exactly, if we now mix all of this and keep it in the back of our minds – I mean, what can we spontaneously think of doing?
> […]
> Frances: So we did have – or one direction that one could go would be basically a location manager. *[Fiona writes this down.]* Or what [information] did you have?
> *Frances turns to Freya.*
> […]
> Freya: Well the documentation, right? *[Freya reads off Card 2.]* Currently there are no suitable offers providing such innovative documentation at a reasonable price. […] So I have to think here about your idea with documenting the whole journey. Right? So you make a wedding website [that captures the process of planning the wedding] from start to finish. […] So in the end you can mix and match all [data on the website] to book all kinds of relevant offers, create a film, and so on.

> Fiona: So the whole [wedding] planning process is mapped onto possible products and services […] relevant for each process step. So with one click I can say I need a location in [City X] and then I get the list of associated services [in that location].

As illustrated by this team interaction, the co-founders in Team F encouraged each other to contribute their individual-level information to allow new venture ideas to emerge. Moreover, even after Frances suggested an initial idea (i.e., a location manager), she turned to Freya to ask for how her information might contribute. Following Freya's proposal, Fiona elaborated on how both her co-founders' ideas built upon each other (i.e., the location manager as a component within Freya's wedding documentation idea). We also noted that the behavioral cues displayed by the team during this interaction complemented the synthesis of information the team verbally articulated (e.g., Fiona taking notes and Frances turning to Freya). We provide additional examples from our data for this type of team interaction and mode of building ideas in Table 4.

Table 4. Illustrative examples of different modes of building ideas in entrepreneurial teams: Synthesizing information into ideas

Second-order theme	Illustrative examples
Synthesizing information into ideas	Team A *The team has just finished discussing their first idea, a location scout service for events.* Adam: I have this information about entertainers at family celebrations. […] These entertainers have no opportunity to offer their services centrally somewhere. Allen: Maybe we would just need to broaden the [first] idea and say we don't do a location scout, but instead do eventmanager.com, yeah? Adam: We could tie the ideas together. Allen: Where you can find locations, entertainers, beverages… Adam: A complete event platform. *[Adam laughs.]* Allen: Exactly. Team J Jake: Should we try to incorporate as much of the information as possible into our ideas? Jess: That is how I would have understood it, that we use the market situations described on our cards. Jake: So the market is about products/services on all the different aspects of events. Jess: Yes, and... *[Jess looks back at her cards.]* Jake: You want to add something about the market? *Both co-founders are quiet for a moment.* Jess: There are few professional event planners for people's private events. So there is market potential for something professional there. Jake: OK. So the potential is there for event planners. Jess: Exactly. Team R Rob: OK, so this all seems to be playing into different types of platforms. Ryan: Yes, here *[referring the shared information]* there is something about [event] preparation, organizing the accommodation of guests, exotic food, etc. Team T Ted: The way I see it, [the different pieces of information] actually fit well together, because on the one hand, [I] have the description of the market situation and you have

the approaches through which the different ideas may be executed. So like you have the point about using a quadcopter to film a wedding.
Tom: Exactly.
Ted: And with me it is more about people organizing weddings and other family celebrations don't get professional support. It fits together well because you can very nicely build an entire business idea around […] the life cycle of private celebrations.
Tom: I also see it this way. As I said, one [piece of information] with me here is quite specifically about setting up the marriage via online portals like [Platform A] or [Platform B].
Ted: Yes, and that's the life cycle: first you have the setting up of the marriage, then you have the wedding, which you can film with a quadcopter, then you have the baptism, and then the confirmation. That's a chain of value creation that you can follow.

The second mode of building ideas was that of a co-founder dominating team ideation with their own views. In this case, a single co-founder tended to control entrepreneurial team ideation – this co-founder pushed forward their own points, whilst brushing off others' comments. Importantly, this did not necessarily involve the dominating co-founder only making use of their own information during the ideation process. In fact, the dominating co-founder *did* make use of information shared by other team members, but only to justify and argue for their own ideas. For example, we observed the below interaction in Team D following Dan's statement that the team should think about a business model for an event agency:

Dan is leaning back in his chair with his arms crossed.
David: Is the information really so specific [as to only suggest an event agency business idea] for you guys? In the information here *[David reads off Card 2.]* it's about – this already fits to events – how when people get married they spend lots of money and effort on expensive technologies to capture the whole thing [as a high-quality film]. So, with quadcopters you record something and –
Dan throws up one hand and leans forward, interrupting David.
Dan: So events. Weddings are events and I think [our idea] is anyways about founding an agency that organizes wedding and birthday events.

This example illustrates how a co-founder may dominate entrepreneurial team ideation by brushing off a co-founder's comments and reframing this co-founder's contributed information to push the team towards focusing on the dominating co-founder's own idea. The dominating co-founder's contributions to the team may also be punctuated by the co-founder displaying dominant behavioral cues, such as Dan's posture in the above interaction and his gesture when interrupting David. While this mode of building ideas through a single co-founder dominating entrepreneurial team ideation often followed from the dominating co-founder's initial approach of directly proposing an idea without first sharing their information (as in the above case of Team D), it also occurred in later stages of the ideation process. For instance, we observed a co-founder dominating entrepreneurial team ideation long after all the founders had shared their information in Team G:

Greg: We have to think about the price, in terms of what a wedding planner costs.
Grant: Exactly, that is the –
Greg interrupts Grant.
Greg: But in principle, you still have the budget problem where, even if you find a wedding planner [by] googling him on an event platform, you have to pay. So I suspect […] people with the willingness [to pay] would then just speak to [the wedding planner] directly.
Grant: I wonder if you can cover the costs arising from the commission and still make a profit.
Greg: I think if you want to set up a business like this […] you have to scale fast. […] You don't hire 100 wedding planners in one fell swoop. Rather, you set up a platform and make it well-known. Everyone planning a wedding can, for example, organize it via the [Team G]-Wedding platform.

In this case, Greg steered the team away from wedding planner-related ideas and towards a platform solution. Moreover, Greg displayed the dominant behavioral cues of interrupting his co-founder, Grant, and again speaking past Grant's next attempt to continue building on the previous commission-based wedding planner idea. Table 5 shows additional examples of this mode of building entrepreneurial ideas through a co-founder dominating team ideation with their own views.

Table 5. Illustrative examples of different modes of building ideas in entrepreneurial teams: A co-founder dominating team ideation with own views

Second-order theme	Illustrative examples
A co-founder dominating team ideation with own views	Team C *Chris dominates the team's ideation with his own idea based on his information on Card 2, while brushing off Carla's skepticism about there being a market for it.* Chris: [The idea would be] to film weddings from the bird's eye view using a quadcopter. Carla: Do people want that? Chris: Do people want that? Yes. Carla: Really? Chris: Yes, with weddings everyone always wants something special, something different to what they have seen someone else has. Or if they see something amazing at someone else's wedding then they also want to have that. Carla: But really? Chris: And I think people are crazy. So it say's [on my information] that it has to be a reasonably priced way of documenting [the wedding]. I don't think it has to be at a reasonable price, because people are ready to pay for it. Carla: So they would pay for something crazy. Chris: They would be willing to pay. Team F *The team has just finished discussing the size of the market for their ideas when Freya starts dominating the team's ideation in deciding which idea is the more promising one worth discussing further.* Freya: So, what that means for me is that it is very important for people that this [party] goes well. Right? They have a lot of must-haves. That means they invest a lot of time [into event organization]. That is what [our calculation just now] tells me. There are enough people who organize such events for themselves and there is money

in [this market]. Now, my question is: what do we want? What money do we want to be aiming for? […]
Fiona: Yes, you could interpret it like that – they want certain must-haves [for their party] or, they want to minimize the time they invest into it. And then what can we offer them so that they don't have to spend these 180 hours [organizing the event].
Freya: Exactly, there are multiple interpretation aspects. I would say we just decide on one. […] My vote is very clearly for this one.
Fiona: The event planner?
Frances: An online platform.
Freya: Where I can design for myself a personalized event but with all kinds of supporting products/services. And where I can have this documentation aspect.

Team K:

Kevin: The way I see it you would make a multi-sided platform. And the important thing there is that it should have a regional focus. That's why you would have at the beginning some kind of a questionnaire. So you would first have to answer how many guests do I want?
Kyle: OK.
Kevin: I mean, for the celebration.
Kyle: OK.
Kevin: And then you would have already restricted which venues are even an option, given the number of guests.
Kyle: Yes, and you can relatively –
Kevin interrupts Kyle.
Kevin: And you can say your location – where you want to celebrate.
Kyle: That also fits together.
Kevin: Exactly. But you need to differentiate between location and venue.
Kevin continues to go into the details of his platform idea in similar such exchanges, without giving Kyle an opportunity to add anything other than short affirmations..

Team T:

Tom: What do we want to concentrate on? On the provision of these different specialized event organizers via a platform or on the implementation itself? […]
Ted: I think both because what is the problem for the people? The problem is anyway that you have to do the project management by yourself. You have to be born able to do it or have some experience in doing it. And the second big challenge is to find the contacts to these specialized providers. Those could be the exact two pillars. One is project management from start to finish. So to make a project plan and to see, if I were to now organize a wedding, I would have to find a venue two years in advance anyways. If it is a really good venue, I have to book it because I wouldn't get it otherwise. Then I have to know approximately how many guests I will have and then there is a whole list of information I need to put together, for which the couple does not have the time. And since people are getting married later and later now, they have money and there really are lots of agencies that can help them. But I only know this is the case for weddings. This approach of starting right from when the couple gets together up until the wedding and beyond is what we need to do.
Tom: That means you can book your golden wedding anniversary already at the wedding itself.
Ted: Uh, that makes no sense. *[Tom laughs.]* First of all, most marriages end in divorce anyways, so it wouldn't make much sense. But what you can do is to send a message to the couple on round wedding anniversaries and say that you got married via our service at such and such time and we can offer you this [opportunity to celebrate the anniversary] and so on. I believe that would also be accepted.

The third and final mode of building ideas we observed involved co-founders collaboratively enriching the team's information. For instance, we observed the following interaction in Team K:

> Kyle: That *[Kyle refers to Card 1.]* was about entertainers, on how they don't have a proper platform to promote themselves. That also only works through recommendations. That was also the case with [a mutual acquaintance].
> Kevin: That was also the case with us. We always had this one musician who did parties for us and you could only get him through word-of-mouth.
> Kyle: OK. No, because I think it's good to integrate the whole thing; because every single thing *[Kyle refers to cards shared already.]* the people can do themselves. But there is a high willingness to pay once [the different services] are provided together.

As shown in the above team interaction, Kyle and Kevin collaboratively enriched the shared information within their attention, by drawing on personal experiences. Discussing these experiences not only allowed Kyle and Kevin to individually relate better to the information about entertainers on Card 1, but also to each other in terms of understanding as a team the customer need for incorporating entertainers into some kind of event platform. Collaboratively enriching information ultimately played into Team K's idea of building a multi-sided event platform with a regional focus that would include the possibility to book entertainers. We also observed the mode of building ideas through collaboratively enriching information in Team L during the following team interaction:

> Liam: Exactly. What you could do is offer an attractive opportunity for lesser known event venues to become renowned, […] but you don't get the larger event venues, because they are anyways overbooked. You could design it so that the venues enter their free dates into the portal.
> Luke: You can even offer something like an AirBnB for private event locations.
> […]
> Liam: I think that's not bad at all, because if you wanted to get married in this city, then the really big event venues, like all the hotels and so on, those are known to everyone.

As illustrated here, Luke drew on the comparison to the known business model of AirBnB and Liam added his own personal perception of the experience of finding a wedding location; collaboratively enriching the team's shared information in this way helped Team L to better articulate the customer need and market potential of the idea they were building. Thus, these and other team interactions in our data (see Table 6 for more examples) suggested that collaboratively enriching information through the sharing of personal experiences influenced the compilation of individual inputs into entrepreneurial ideas at the team level. Moreover, collaboratively enriching information can help entrepreneurial teams to engage in "vicarious mental simulation of [a potential customer's] experience from the point of view of [this] person" (Packard & Burnham, 2021, p. 3) to support the ideation process.

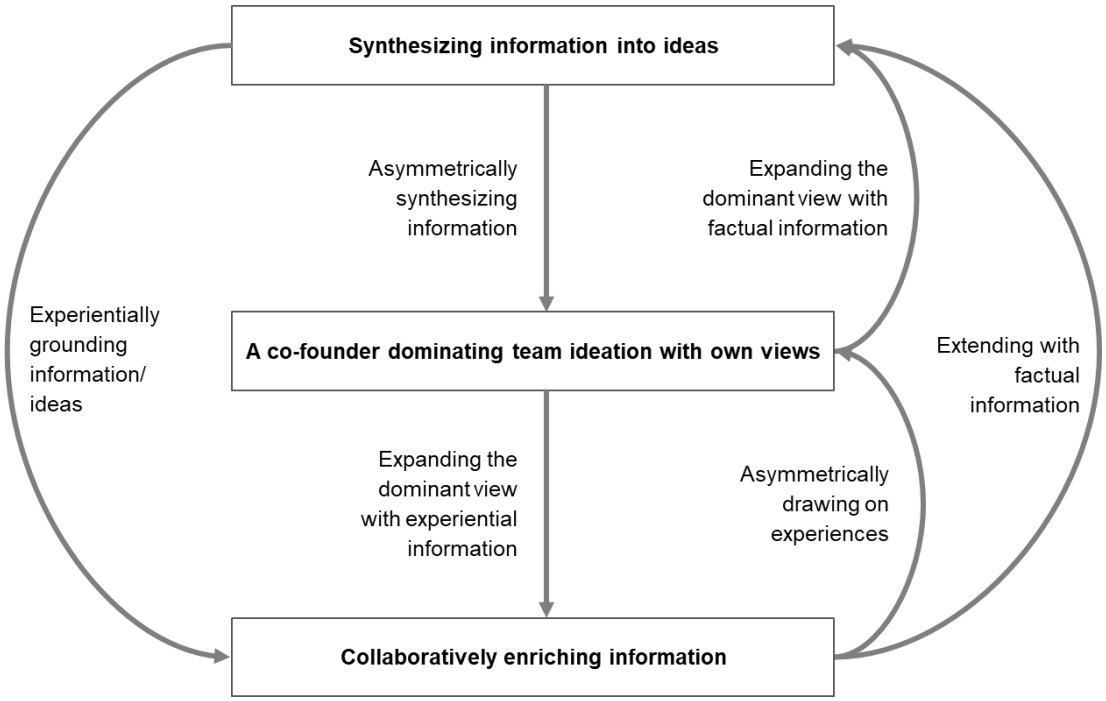
Table 6. Illustrative examples of different modes of building ideas in entrepreneurial teams: Collaboratively enriching information

Second-order theme	Illustrative examples
Collaboratively enriching information	Team E Elias: So we would offer last-minute places at… Ed: At weddings. Elias: At weddings or large celebrations and birthdays. And that is really pricey. So the people need to buy their way into the high society. *[Elias laughs.]* Ed: Yes, and if the [person whose event it is] has a title in their name then it costs at least 15% extra. Elias: Exactly. The butcher can go to this event and he would go exactly as he is and that's fine. Ed: I would say around midday that I am a guest who paid my way in. Elias: Yeah, so we would probably have to make sure that it is already agreed that they are not allowed to speak about it. Ed: You think? Elias: Yes, otherwise it wouldn't work. We want these people [who paid their way into the event] to then themselves get married years later and accept guests who pay to attend their wedding. Team F Fiona: Or we could do something like Groupon for weddings? Freya: What is Groupon? Fiona: Groupon. You don't know this site? Where there are these special offers? Because you just said, who has to pay for it? […] Maybe even the provider can pay a little bit in such a way that the end user pays a lower price. Because the provider says – so Groupon is like the Aldi principle. I [as the service provider] will give you a lot of my wellness massages, yeah? And if you really bring me 100 customers in this specific time period, then I can offer the massage for half the price. […] Freya: I have heard of it, but not under the name [of Groupon]. Frances: Or like when you say that so and so many people need to buy a product and then everyone gets it for a cheaper price. You see that on the Internet. eight people booked already and ten bookings total are needed [for the price to be lowered]. If two more people were to book it, then all ten people would be able to get [the product] for €70. Team P Pam: With the idea of documentation [e.g., photography] at celebrations, it is probably something that doesn't fit so well. Locations, caterers, and entertainment fits better together, I think. Phil: But the documentation fits into it too, I think. I mean, imagine a wedding. The people always want to be photographed. They are actively seeking out the photographer to have their picture taken. Pam: Yes, yes, they do run to the photographer, but what the people want is like what we had at a funeral. We had no photos from my dad and then my brother found some box in the attic full of photos with us when we were kids. We gave those photos then [for the funeral]. That has some value. But with a photographer [at an event], those photos are posed for, right? Phil: Yes, but it depends on what one wants at a wedding. Pam: Yeah, fine. And when it comes to documentation at weddings, it is probably something different, where you get something like a finished photobook afterwards. Team S Stanley: I have had this thing with my sister's wedding right now where I asked everybody for their e-mail because I wanted to have an innovative photo platform where like everybody from the event could upload the pictures from different perspectives.

Steve: That sounds really cool. *[Sam laughs and nods.]* Yes. We should have done that for our wedding actually.

Although we considered alternative explanations for why teams might adopt certain modes of building ideas rather than others, we could find no clear pattern. There appeared to be no relationship between the heterogeneity of team members' backgrounds and the modes of building ideas within the team. For instance, both teams with heterogeneous team member backgrounds (e.g., Team O) and teams with homogeneous team member backgrounds (e.g., Team T), engaged in all three modes of building ideas. Moreover, there also appeared to be no clear connection between a team's real life venture, such as in terms of the venture's industry, and the team's modes of building ideas. We can therefore arguably rule out such composition-based alternative explanations for entrepreneurial team ideation.

Figure 3. Micro-processes of building ideas



Moving between modes of building ideas. Interestingly, our data highlighted the dynamic and varied nature of entrepreneurial team ideation, such that teams could move between different modes of building ideas. In particular, our data suggest that there are six micro-processes[6] underlying teams' transitions between each of the three modes of building ideas: (1) experientially grounding shared information, (2) asymmetrically synthesizing

[6] We considered whether composition-based factors, such as the heterogeneity of team members' backgrounds might have contributed to the types of micro-processes we observed in how teams shifted between different modes of building ideas, however, no clear patterns could be identified.

information, (3) asymmetrically drawing on experiences, (4) expanding the dominant view with factual information, (5) expanding the dominant view with experiential information, and (6) experientially grounding information/ideas. Figure 3 visualizes these micro-processes, which we discuss in turn.

By experientially grounding shared information, teams shifted between the modes of building ideas through synthesizing information and building ideas through collaboratively enriching information. For example, we observed this shift in Team G:

> Gabriel: In general, I noticed [our information suggests] a lack of a good match between supply and demand. […] And I think, as you have already pointed out *[Gabriel looks at Grant.]*, this internet theme would probably be part of the business idea.
> Greg: Yes, […] we can think about something in the direction of a platform that is like a forum. […] It could be themed, like for weddings people can offer wedding-related services. […] And you would make money from the people adding their offerings onto the platform.
> George: Basically, purely doing the matchmaking.
> Grant: But […] I think those kinds of platforms exist, like weddingsite.com.
> Greg: Yeah.
> Grant: There are these wedding consultants on there with their own little ads. But somehow I have the feeling, this isn't going to really scale. So I could imagine it if we do a more active matching [between service providers and event organizers] and then earn some kind of provision.
> Greg: In that case you would need a wedding planner […] who would then draw on this database.

Team G initially followed the mode of building ideas through synthesizing information with Gabriel trying to summarize the main points from all the shared information and Greg suggesting an idea that George added to. However, drawing on his personal experience and beliefs about competitors to the matchmaking platform suggested by Greg, Grant moved the team towards a mode of building ideas through collaboratively enriching information, through which Greg then refined the initial idea (i.e., incorporating a wedding planner). In Team K, a similar transition took place from the mode of building ideas through synthesizing information to that of collaboratively enriching information:

> Kyle: I think planning family celebrations is one of the main topics crystallizing [out of our information]. Like here, *[Kyle refers to Card 5]* people planning events can only draw on the experiences of their friends. Although, I don't think that is necessarily true, given that there are forums with all that information, though it is not presented very nicely.
> Kevin: Yes.
> Kyle: And in general, I think people should not have to be planning [such celebrations] themselves.
> Kevin: Yes, exactly. […] That's ridiculous, because if you look here *[Kevin refers to Card 6]*, it's 180 hours to plan a party and then *[turning to Card 4]* you still pay 40% of your monthly income. *[Kevin laughs.]* You must be doing something wrong. So I

> think a business idea, which could actually be profitable, is that you bundle catering and a portfolio of event locations […] and then bring these to the market via wedding agencies.

Team K moved from building ideas through synthesizing information, as seen by Kyle's articulation of the main topic being that of family celebrations, towards collaboratively enriching information by the team members drawing on their knowledge of online forums and personal perception of the self-organization of such celebrations being ill-advisable. In this way, experientially grounding the synthesized information, allowed Team K to transition to the mode of building a new entrepreneurial idea by collaboratively enriching information.

Teams could also move out of the mode of building ideas through synthesizing information when the synthesis became asymmetrically skewed towards incorporating one co-founder's inputs; this resulted in a single co-founder dominating team ideation. For instance, in Team O after the co-founders had begun sharing all the information to support ideation, we observed the following:

> Owen: So [the information suggests] some [idea] to do with parties.
> Olivia: Exactly.
> […]
> Olivia: So here, with my information, on the topic of weddings, […] an increasing number of marriages trace back to some kind of Internet contact that took place over some kind of platform.
> Owen: OK. I have also got something with weddings somewhere. *[Owen looks through his cards.]* […] When you get married these days, there are often expensive technologies used, like some kind of quadcopter that flies over and photographs [the wedding] and so on. And there are no suitable offers on the market that provide such innovative documentation at a more reasonable price. So something with weddings and documentation or innovative documentation.
> *Both co-founders are silent for a moment.*
> Olivia: Yeah, we have that already. Wedding planner. *[Olivia laughs.]*

As this interaction illustrates, the team initially was thinking about a new venture idea to do with parties based on the initial shared information. Yet, after Olivia shared a new piece of information on weddings, she started to become more attached to the idea of providing a service for organizing weddings more generally. Olivia then dominated the ideation process by reframing the next piece of information shared by Owen to be only about planning weddings, already directing the team towards its first new venture idea. Olivia then continued to interpret the information shared by Owen to connect it to weddings:

> Owen: And, here, my last card: something about how there is a lot of fragmentation in family parties and celebrations and people who are choosing things for their party somehow can't draw on the experiences of customers outside of their own friend circle. So what that means –

Olivia: Wedding presents, or what?
Owen: No, products/services for parties, like who can be my entertainer or who is a good entertainer.
Olivia: OK
Owen: So to do with [customer] reviews […].
Olivia: Like how do I rate the entertainer who was at my wedding?

As the next interaction in Team O, showed, Olivia went on steering the team towards the wedding planner idea she had first articulated:

Owen: OK, good. […] So business idea number one.
Olivia: Wedding planner.
Owen: What does that mean?
Olivia: So a person who organizes everything for you, who does like 100 weddings a year.

Thus, by asymmetrically synthesizing information to fit their own views, a co-founder can shift a team towards a mode of building ideas in which this co-founder dominates the ideation process.

Similarly, teams shifted from building ideas through collaboratively enriching information to a single co-founder dominating entrepreneurial team ideation, when one co-founder's experiences seemed to hold more weight than those of the other co-founders. For example, this occurred in Team N during the following exchange on the topic of wedding agencies:

Noah: OK, I haven't really dealt with this subject much.
Nick: I have. *[Nick laughs.]*
Noah: You got married three years ago. You can speak from experience. What I do know is that there are more and more agencies that already plan this sort of thing. But I don't know if it is reasonably priced and how widely…
Nick: OK, so my experience: we didn't have a wedding agency, but for my friends who did have something like that, in the end [the agencies] did nothing more than a kind of exchange of addresses and then charging lots of money for it. That was actually pretty bad.
Noah: Aha.
Nick: So the quality of the – and above all, what is perhaps already quite interesting is that […] I think nowadays these agencies are designed more for younger people.

Although Team N initially started by collaborating enriching the information through sharing experiences to support ideation, Noah created space in the team's discussion for Nick to dominate, by weighting the value of Nick's experience more highly. Interestingly, this example highlights the role of the non-dominating co-founder in framing the dominating co-founder's experiences so that they contribute more to the emergence of an entrepreneurial idea.

In general, dominating co-founders did not control entrepreneurial team ideation continuously for the entire task. Indeed, other co-founders could start to contribute to the team

by providing factual information to expand the team's cognition beyond the dominating co-founder's view. This micro-process led to a shift towards a mode of building ideas through synthesizing information. For instance, the following interaction took place in Team B after Ben had shared his information from Card 5:

> Brad: OK, I'll write that down.
> Ben: If you were to make a business idea based on [the information on my card], you could […] make a platform for experience exchange among customers of event services.
> Brad: Let us – or do you guys think about just trying to collect the facts and sort them and based on that [derive ideas]. So a fact [from Ben's information] is that there are very few opportunities for exchanging experiences [about the quality of event services] beyond one's own friend circle.
> Ben: Yes, let's make a high-level bullet point for parties/events or something so that we can assign [my information] to that category.
> Brad: If I put both [your cards] under parties and celebrations, then… *[Brad is making notes.]*
> Ben: Yeah, yeah, good.
> Brian: We need to assign [the information] a number of something, because I have that too.
> Ben: You also have parties?
> Brian: Yes.

As this interaction illustrates, the micro-process initiated by Brad of expanding the team's cognition to focus on synthesizing factual information prevented Ben from continuing to dominate team ideation with his platform idea. This expansion with information allowed the team to shift into a mode of synthesizing information to build ideas, as shown by Brian then also contributing to how the team organized the information. Thus, entrepreneurial teams that are initially in the mode of building ideas through a single co-founder dominating team ideation can shift into synthesizing information into ideas by expanding the team cognition with factual information.

Additionally, an entrepreneurial team could transition from a single co-founder dominating ideation towards expanding the team's focus by considering experiential information. For instance, in Team A, while Allen initially dominated team ideation with his suggestion of offering an Airbnb type of service for booking event locations, the team transitioned towards collaboratively enriching information as shown in the following interaction:

> Allen: Something like [Airbnb] but for event locations would be really great. That would be super. That is actually a really good idea.
> Adam: And [City X] has actually lots of [locations] to offer.
> Allen: Yes, and, like it says in the information I received, these [locations] are often unused and I know when you talk to people, there are always people asking where can we somehow, you know?

> Adam: Yes, yes. I also know someone who has a small minibar and he rents it out for birthdays and all sorts of events, but he only reaches those people directly. The people know his bar and reach out to him or via his website. But I think he is not booked 100% of the time.
> Allen: Exactly. And with bars it tends to be that you ask them if you can hold a celebration there.

As this interaction illustrates, Adam used the opening provided by Allen to add his own personal information to confirm the market need for the team's idea. As a result, the team turned towards collaboratively enriching information instead of Allen alone dominating the ideation process. Such a transition through expanding the dominant view with experiential information need not necessarily involve the team discarding the dominating co-founder's perspective entirely. Indeed, our data suggested this micro-process more frequently involved broadening entrepreneurial team ideation through allowing other team members to contribute.

The final micro-process we observed was that of experientially grounding information/ideas, which allowed entrepreneurial teams to shift from a mode of building ideas by collaboratively enriching information to building ideas through synthesizing information. For example, in Team G, the following exchange took place:

> Gabriel: Who would have the greatest demand? I mean, from whom are we going to earn the most? That is the question. Is it couples who can only spend €12,000, and perhaps don't pay for it all themselves, or is it musicians, who pay for being matched on the platform? Or photographers?
> George: So I think, I mean yeah, OK, who would pay the most is the real question. […]
> Grant: I think the willingness to pay of such young couples is usually not so high as to then also pay money for something like [using our platform]. [A wedding] is already an expensive event and they already play €1,000 for a location and then don't have any willingness to pay an additional €1,000 to book something. So I would tend towards a provision-based approach.
> Gabriel: Yes, exactly, the price sensitivity of young couples is quite high. I can also personally say that I would rather use that money for the party, like for the alcohol.
> Greg: Yeah. How young are these couples?
> Grant: 30 years old. *[Grant looks at Card 3.]* So, actually…
> George: And they put in 180 working hours [to organize the event]. *[George refers to Card 6.]*

This interaction shows that Team G started collaboratively enriching information, as seen from Grant and George's discussion on the price sensitivity of the potential target customer segment for their new venture idea. However, by questioning the team about the actual age of the couples in this customer segment, Greg led the team towards extending Grant and George's personal experiences with factual information. We observed a similar transition in the mode of building ideas through collaboratively enriching information to building ideas through synthesizing information in the following interaction that took place in Team H:

Hal: Then we have a marketplace for collaboratively created events and other growth possibilities in this area.
Harvey: I mean you could of course have something like [name of popular company that sells experience vouchers]. That works.
Hal: That works great. […] So a marketplace for events [would be an idea], but there are definitely big competitors. […] We need to decide if we'll do weddings and birthdays, or only one of those.
Henry: I think [based on our information], the biggest market is the one for weddings.

Here, the team members initially drew on their shared knowledge of a popular company that offered a related service to gain confidence in the market potential for their own idea, before extending this collaboratively enriched information with factual information related to competitors and market size. In general, our data suggest entrepreneurial teams switch from collaboratively enriching information to synthesizing information through extending personal experiences and knowledge with factual information.

Table 7. Illustrative examples of relegating information/ideas to the periphery of the emerging entrepreneurial team cognition

Second-order theme	Illustrative examples
Shelving ideas	Team C *The team is finishing the discussion of the business idea of filming weddings with a quadcopter.* Carla: Yes, so anything that has to do with weddings, I think will always work. Chris: It always works. [The quadcopter idea] is probably the most promising one. […] So should we already decide on one of the ideas or? […] Maybe let's just continue [ideating]. Team D David: There are of course photographers like [company name] and so on […] but there are also special things like films made from a bird's eye view with a quadcopter, which can be combined [with the event platform idea]. Dan: The question is how do we want to do this. Do we want a predefined package or a platform where people find each other where we don't offer the event services, but rather they offer the event services to each other? That is the question. *Rather than expanding upon David's suggestion of combining the filming events with a quadcopter with the team's previous event platform idea, the team's focus shifts towards another aspect of implementing the platform idea.* Team F Freya: Maybe there is also a community aspect to [the idea of innovative photography and filming of weddings], yeah? So maybe it is not just a forum but that you might be able to find someone on the homepage who can turn your photos into a film, because he has already done that before. Right? Frances: Let's keep that in the back of our mind. That would be an [idea] where your information is already covered. Freya: Yes. Frances: On my card it is about exchanging experiences. *The team shelves the idea on the innovative photography and filming of weddings for the moment, though aspects of it are later incorporated into the team's other ideas.*
Abandoning information/ideas	Team A Adam: I would see [our ideas so far] not as multiple ideas but more as ways to expand a single idea. I mean, [regarding the only idea unconnected to the others], I would not

start another [Platform B] for singles find each other and get married and so on. That already exists.
Alan: I would – I am thinking about doing something like that.
Adam: Really? *[Adam and Alan both laugh.]*
Alan: But that's not the topic here.
Adam: But more in the direction of a dating platform? Nothing wedding-related.
Alan: Yes, yes. Dating.
The team seems to decide that this idea and the related information on Card 3 does not fit the ideation task at hand, and discuss neither the idea, nor the information, again.

Team P

The team is discussing the idea of organizing religious celebrations.
Phil: I can theoretically imagine working on [this idea], but emotionally I have a blocker there.
Pam: I feel the same way.
Phil: OK.
Pam: Then that means, we should try to make at least one idea from each of these *[Pam refers to the other 5 cards]* to have three to five ideas we can select from.

Team R:

Ryan: OK, so in principle an idea could be to offer a portal where entertainers and musicians can sign up. The mother of my friend celebrated her sixtieth birthday and she also used such a portal.
Rob: Iamturning60.com or what?
Ryan: I don't know what it was called but she was able to look at jazz bands or something like that who are willing to play at such events for up to €300 and then she called them.
Rob: OK.
Ryan: I would say this market situation doesn't really help us because if we were to start an event company or such a portal – those already exist.

Finally, in addition to the dynamic nature of entrepreneurial team ideation in shifting between different modes of building ideas, we also found that not all shared information or ideas remained within the team's focus during the ideation task. Indeed, our data showed that in many entrepreneurial teams, information and ideas moved out of the team's focus and were relegated to the team's information/idea 'storage' (see Table 7). Our data showed two ways through which this might happen. First, a team might shelve an idea to shift the team's focus towards building a new, unrelated idea. For instance, we observed the following sequence in Team M after the team had identified the idea of setting up a party planner platform that would connect people searching for various event services with people willing to offer these services:

> Miles: But the thing is, [the platform] offers everything [i.e., locations, event photography, etc.]. Don't we want to concentrate on individual ideas? As a counterpart to the holistic platform idea?
> […]
> Mike: We can again take a quick look back at the cards, and everyone come up with an idea. Then we'll also be able to have more ideas.
> Miles: When we have more ideas, we can decide based on all of them.

During this interaction, Team M shelved the idea of the party planner platform, effectively shifting it into the team's 'idea storage' to direct the team towards building new ideas. Yet,

Team M did not discard the idea, instead intending to revisit it once they had accumulated a larger set of ideas to choose from. Thus, when entrepreneurial teams shelve a new venture idea, moving it to the periphery of the team cognition, this can free the team to develop a greater variety of alternative ideas within the team cognition.

Second, a team might abandon information or ideas, either due to cognitively motivated reasons (e.g., perceiving an idea as commercially non-viable or technically infeasible) or due to emotionally motivated reasons (e.g., feeling unenthusiastic about a particular market). For example, Team E discussed the idea of offering a last-minute event locations online platform. The idea hinged on the original organizers of an event cancelling it last-minute, allowing the event location to become available. The following interaction shows how the team abandoned this idea:

> Elias: I mean, it says here *[Elias refers to Card 4.]* that supply is scarce and popular locations are often booked well in advance. So the probability that great last-minute events actually materialize [when the original organizers cancel] is very low. […] And the stupid thing is now there are a bunch of people saying, "Cool, we want to book a last-minute event location," […] but none of the 30 acquired events actually get cancelled.
> Ed: If nothing gets cancelled, then nothing gets cancelled. Then [the idea] is just dead.

Team E thus realized that the last-minute event locations idea was likely unviable given the low probability of last-minute event locations becoming available. Despite initially devoting time and cognitive resources to an idea, entrepreneurial teams may therefore eventually abandon the idea if they perceive it to be commercially non-viable or technically infeasible, relegating the idea to the periphery of the team cognition.

2.5 Discussion

In this study we address the research questions: *What are the micro-level mechanisms of information sharing and processing through which team members' inputs shape entrepreneurial team ideation? How do these mechanisms shape the team's building of new entrepreneurial ideas?* In doing so, we apply an inductive, qualitative approach to develop a dynamic, micro-level model of entrepreneurial team ideation. Our findings highlight the importance of taking a compilation-based perspective on how team members shape entrepreneurial team ideation. Our work has theoretical implications for entrepreneurial team ideation research, as well as wider implications for developing compilation-based theory on team cognition in entrepreneurship and general management.

2.5.1 Theoretical Implications

The key contribution of our work is that we uncover micro-level mechanisms underlying how individual team members' inputs shape entrepreneurial team ideation. Taking a compilation-based perspective, our findings suggest that team members' contributions may be differently leveraged during the ideation process, such that a composition-based perspective – considering all team members as contributing equally (Gruber et al., 2013; Kier & McMullen, 2020) – may overstate the contributions of some team members while understating those of others. Moreover, by taking a compilation-based perspective, our work highlights the importance of social aspects during entrepreneurial team ideation. Team members not only try to combine each other's information in building ideas, but may also engage in micro-processes of convincing each other of the entrepreneurial ideas as these develop. The social aspect of the ideation process may therefore be crucial to consider when attempting to extend theorizing on entrepreneurial ideation from the individual level to the team level. For example, in the case of a solo founder, internal factors, such as the founder's prior experience and motivation may be important in building the founder's confidence in an entrepreneurial idea (Dimov, 2010; McMullen & Shepherd, 2006). Meanwhile, in an entrepreneurial team, interpersonal factors, such as how effectively a team member is able to contextualize their prior experience to relate to the other team members, become especially relevant. Thus, our work suggests that, in moving from individual-level to team-level studies of entrepreneurial ideation, scholars should take the dynamic and micro-level factors of the team ideation process, such as its deeply social nature, into consideration by explicitly accounting for the influence of team members' continuous interactions.

Furthermore, we address calls in the extant literature for investigating the emergent states and processes through which entrepreneurial team cognition emerges (de Mol et al., 2015). In particular, we apply the compilation-based perspective to reconcile theory and empirics, uncovering micro-level foundations underlying the emergence of entrepreneurial team cognition during the new venture ideation process. There are two aspects to this micro-level foundation. The first involves elucidating the role of incomplete and biased information sharing in influencing how individual inputs shape entrepreneurial team ideation, an important task for entrepreneurial team cognition (de Mol et al., 2015). We identify instances of incompleteness in co-founders selectively sharing information within the team, while bias manifests itself through co-founders contextualizing information while sharing it. Interestingly, our study also reveals a third way through which information (indirectly) enters the team cognition, as we find that co-founders may directly propose team outcomes (in our case,

entrepreneurial ideas) based on their own information without first sharing this information within the team. This is an important contribution to entrepreneurial team cognition literature as, not only does our finding add a new facet to the nature of information sharing in teams, but we also find this third pathway has significant implications for setting the tone of the subsequent emergence of team cognition. Specifically, bypassing explicit information sharing tends to lead to a co-founder dominating team ideation with their own views.[7] Our elucidation of the three mechanisms helps future research to consider how they may mediate individual cognitions shaping team cognition.

The second aspect of our contribution to the micro-level foundation for the emergence of entrepreneurial team cognition is the illumination of the *dynamic* nature of this cognition, which composition-based perspectives would otherwise assume away (Kozlowski & Klein, 2000; Mathieu et al., 2014). In contrast to the composition-based perspective applied in much of the extant literature on how team members' inputs shape entrepreneurial team cognition (de Mol et al., 2015), we provide a compilation-based perspective. In particular, our model of the entrepreneurial ideation process highlights that entrepreneurial team cognition is not static, but continuously shifts as individual-level information enters, dominates, and leaves the focus of the entrepreneurial team cognition. Our work complements the macro-level view of entrepreneurial team cognition by elaborating on the micro-level dynamics involved in its development over time.

Moreover, our work contributes to literature on entrepreneurial team processes (Patzelt et al., 2020). In particular, we offer micro-level insights into the process through which entrepreneurial teams collectively develop and become convinced of the desirability of a particular entrepreneurial idea. In doing so, our findings may support further research into the emergence of group origin ventures, which result from the desire of a group of individuals to found a venture together (Lazar et al., 2020). For example, our study highlights that in entrepreneurial teams formed by a group of individuals with the desire to work together on founding a venture, each co-founder may engage concurrently in the process of developing a new entrepreneurial idea themselves, as well as attempting to convince the other co-founders of the idea.

[7] Arguably, the issue of one co-founder dominating team ideation is still explained better by the compilation-based perspective than the variant of the composition-based perspective in which only the dominating person's cognition shapes the team cognition (Pirola-Merlo & Mann, 2004), since we also observe subsequent dynamics in which team members challenge the dominating team member's contribution to the team cognition.

Additionally, our study offers the possibility for wider applications within the entrepreneurial team research communities (de Mol et al., 2015). For example, our findings may be relevant for extending entrepreneurial imaginativeness research by applying a compilation-based perspective to the relationships between entrepreneurial imaginativeness profiles and team-level configurations of imaginativeness presented by Kier and McMullen (2020). This may yield novel insights into how the contribution of each team member's entrepreneurial imaginativeness profile may dynamically shape team-level imaginativeness and its associated team outcomes (e.g., venture ideation performance). Specifically, a compilation-based approach might more realistically capture contributions to "aha" moments in which one team member proposes a specific solution and other team members recognize the value of this solution. Our study is also relevant for research on the role of an entrepreneurial team's human capital endowments in shaping entrepreneurial team ideation (Fern et al., 2012; Gruber et al., 2008, 2012, 2013). In particular, our findings emphasize the differential and dynamic contributions of entrepreneurial team members' human capital (e.g., information and experience) to team ideation. Thus, our study encourages future research to incorporate such nuances to team members' human capital contributions when theorizing on team-level outcomes, potentially through applying a compilation-based perspective.

Finally, our work also informs team cognition theories in the wider management literature. In particular, prior theories on team cognition may be reassessed and enriched through the insights offered by our dynamic, micro-level model. For example, (Harvey, 2014) proposes a compilation-based model of how teams produce breakthrough creative ideas through an iterative process of creative synthesis. Our micro-level findings extend this model to incorporate the role of information sharing in influencing how individual-level inputs play into the creative synthesis process. Moreover, our work addresses recent calls for team cognition research that moves beyond the oversimplification of team cognition through team-level aggregation approaches and takes into account the complexities involved in developing shared understandings within teams (Mohammed, Rico, & Alipour, 2021). Our work highlights the importance of considering not only that team members contribute differently to team cognition, but that these differences may change over time and be subject to complex interpersonal processes. For instance, our findings show that while a single team member's contributions to team cognition may dominate, this dominance may be challenged. Moreover, when team members build upon each other's contributions to the team cognition, such as by synthesizing each other's information to develop new ideas, entirely new contributions to team cognition may emerge. Overall, despite focusing on the emergence of team cognition during

entrepreneurial team ideation, our work has general utility in informing various other team cognition research contexts.

2.5.2 Limitations and Future Research Directions

Our study contains some limitations, which nevertheless provide multiple exciting avenues for future research on entrepreneurial team ideation and team cognition. First, as with most inductive, qualitative studies our sample is somewhat limited. But the nature of the rich video data we collected, as well as the relationships we were able to observe, was crucial for the identification of micro-level foundations underlying entrepreneurial team ideation. Second, while our findings draw on data collected from entrepreneurial teams engaged in new venture ideation in a lab-style setting, this methodological approach allows us to identify important mechanisms through which individual-level information is shared within the team and shapes team cognition. Knowing ex ante which information was unique to each team member – and not already accessible within the team cognition – would have been virtually impossible in a field setting. Future work may address both the first and second limitations of the current study by developing scales for operationalizing the constructs we identify and quantitatively testing the relationships we observe in a large scale experimental (or potentially even real-world) study. Moreover, recent suggestions to include neuroscience-based approaches to understand team members' inputs to team tasks (Wang et al., 2020) could also provide further insights into entrepreneurial team ideation.

An additional boundary condition of our findings is that, even though the ventures in our study are fairly early-stage, their co-founders have been working on these ventures together for some time (typically one to five years). While many ventures may be founded by co-founders who share prior history (Zheng, 2012) or even familial relationships (Bird & Zellweger, 2018), the dynamics of entrepreneurial team ideation may be different in entrepreneurial teams in which co-founders have no prior relationship. To further explore this boundary condition, future work may study a smaller set of more nascent entrepreneurial teams over an extended time period, such as over the course of an accelerator or incubator program in which teams are formed at the start (Assenova, 2021; Hallen et al., 2020). Other relevant contexts may include ideation competitions such as Startup Weekend (Kier & McMullen, 2020).

Finally, while we focus on how team members' individual-level inputs shape entrepreneurial team ideation, future studies could apply our compilation-based approach to empirically investigating other activities along the entrepreneurial journey. For example, scholars may observe how team members' inputs shape entrepreneurial team cognition during

market entry. More broadly, management scholars may study how team cognitions emerge in alternative decision-making contexts within established organizations.

2.5.3 Practical Implications

In addition to its theoretical implications, our work also produces practical insights. First, becoming aware of how individual-level information may be changed when it is being shared within the team can allow team members to take advantage of this process. Knowing the micro-level mechanisms of how individual inputs shape team cognitions can help individuals and teams to better position themselves in discussions. For example, team members may learn to introduce their information in a way that is more likely to contribute to team cognition (e.g., by selectively sharing or contextualizing information to emphasize its relevance to the team). Second, understanding how to shift between different modes of building ideas can help teams to avoid becoming stuck within any one mode. For instance, if one team member's contributions start to dominate team cognition, members can challenge this view with factual or experiential information to shift team cognition towards incorporating a broader range of individual inputs.

2.6 Conclusion

In this study we take a compilation-based perspective to uncover the micro-level mechanisms underlying how team members' inputs shape entrepreneurial team ideation. In doing so, we take an important step towards investigating the complexities inherent in the entrepreneurial team ideation process, which have thus far been underexplored by the composition-based perspective underpinning much of extant literature. In particular, we study entrepreneurial teams performing a new venture ideation task in a lab-style setting and demonstrate how the compilation-based perspective can help advance theory in the context of entrepreneurial team ideation. Our work also has wider implications for developing compilation-based theory on team cognition in entrepreneurship and general management.

3 Essay II: Trust in Entrepreneurial Teams: The Role of Entrepreneurial Team Narratives

Although trust within the entrepreneurial team is critical for its success, we have limited insights into the antecedents of a founder's trust in the team. Taking a social information processing perspective, we theorize how entrepreneurial team narratives can be an important resource for building a founder's cognition-based trust in the team. We hypothesize that the heterogeneity and uniqueness of topics in entrepreneurial team narratives are positively related to a founder's cognition-based trust in the team, and that the founder's perceived resource scarcity will negatively moderate these relationships. We apply an automated topic modeling approach to quantitatively analyze interview and survey data from 102 founders across 43 complete entrepreneurial teams and find evidence in support of our hypotheses. Our study has implications for research on trust in entrepreneurial teams, entrepreneurial narratives, and resource scarcity, as well as methodological implications for using topic modeling to study other texts in entrepreneurship research.

3.1 Introduction

Trust is a central construct in organizational and entrepreneurship research (Dirks & Ferrin, 2001; Rousseau, Sitkin, Burt, & Camerer, 1998; Welter & Smallbone, 2006). Trust among team members is linked to positive outcomes (Dirks & Ferrin, 2001; Fulmer & Gelfand, 2012), such as higher team satisfaction (Chou, Wang, Wang, Huang, & Cheng, 2008) and enhanced team performance (De Jong et al., 2016; De Jong & Elfring, 2010). Entrepreneurial teams, defined as "the group of individuals that is chiefly responsible for the strategic decision making and ongoing operations of [the] venture" (Klotz et al., 2014, p. 227), are especially likely to benefit from trust within the team because other control mechanisms that could substitute for trust, such as observable performance and incentives (Spreitzer & Mishra, 1999), are unlikely to be in place in these young teams (Friedman, Carmeli, & Tishler, 2016). Research on trust in entrepreneurial teams suggests pre-team formation factors, such as shared history and similar member backgrounds, positively influence a founder's trust in their team (Beckman et al., 2007; Eisenhardt & Schoonhoven, 1990).

However, given the dynamic nature of the new venture context, such pre-team formation factors likely become less important for trust than hitherto underexplored post-team formation factors, such as those emerging from ongoing interactions within the team after the team has formed (De Jong et al., 2017; Fulmer & Gelfand, 2012). In particular, after their formation, entrepreneurial teams deal with uncertainties and unforeseen events that can change

how team members perceive each other (Breugst & Shepherd, 2017), making *social information processing* particularly relevant for shaping a founder's trust in the team (Costa, Fulmer, & Anderson, 2018; Salancik & Pfeffer, 1978). Social information processing refers to a founder processing information on fellow team members' behaviors and perspectives and can be studied through *entrepreneurial team narratives*, stories told by the founder about the entrepreneurial team (Ashforth et al., 2011; Ibarra & Barbulescu, 2010).

Exploring the relationship between entrepreneurial team narratives and trust has the potential to advance entrepreneurship research in multiple important ways. First, trust develops through ongoing interactions (Blatt, 2009; McAllister, 1995), so studying the link between team narratives and trust can yield valuable new insights into what influences trust between co-founders beyond the characteristics and experiences of team members prior to founding (Beckman et al., 2007; Eisenhardt & Schoonhoven, 1990). Second, while scholars have studied entrepreneurial narratives in terms of sensemaking and sensegiving, such as founders making sense of events and imparting this sense to investors (Grimes, 2010; Hill & Levenhagen, 1995; Lounsbury, 2007), the role of entrepreneurial narratives in influencing internal social environments (e.g., the entrepreneurial team) remains underexplored. Analyzing the relationship between entrepreneurial team narratives and trust allows for novel theorizing on how founders understand the entrepreneurial process. Third, since trust among entrepreneurial team members can benefit team decision-making and performance (De Jong et al., 2016; De Jong & Elfring, 2010; Fulmer & Gelfand, 2012), studying the influence of post-team formation factors on trust can provide micro-foundational explanations for variability in venture development. We thus investigate the research question: *To what extent do entrepreneurial team narratives influence a founder's trust in their team?*

Drawing on social information processing theory (Salancik & Pfeffer, 1978), we argue that entrepreneurial team narratives contribute to a founder's perception of the entrepreneurial team's social context, i.e., how the teammates behave and see the team, and may thus influence the founder's trust in the team (Costa et al., 2018). Consistent with extant work suggesting entrepreneurial narratives are resources for founders to make sense of social relationships within the entrepreneurial venture (Mantere, Aula, Schildt, & Vaara, 2013), we focus on structural dimensions of entrepreneurial team narratives to gain important insights into how team members process social information in relation to each other. Specifically, we study the role of both the *heterogeneity* of these narrative resources (i.e., heterogeneity of narrative topics) within an entrepreneurial team, as well as the *uniqueness* of the set of narrative resources (i.e., uniqueness of narrative topics) within the team's wider new venture environment. Yet

entrepreneurial teams require sufficient external resources (e.g., time and funding) to process their narrative resources. We therefore also consider the moderating influence of perceived resource scarcity, an important contextual factor for entrepreneurial teams, on the relationships between the structural dimensions of entrepreneurial team narratives and a founder's trust in the team. Empirically, we analyze interview and survey data collected from 102 founders across 43 complete entrepreneurial teams. To derive the structural dimensions of heterogeneity and uniqueness, we apply a novel, automated topic modeling approach, which has the advantages of improved replicability of results, scalability to larger datasets, and minimizing the influence of human biases in analyzing narratives (Hannigan et al., 2019). We extend theory on trust in entrepreneurial teams and contribute to work on entrepreneurial narratives by highlighting the entrepreneurial team context. Moreover, we identify perceived resource scarcity as an important environmental contingency in entrepreneurial team processes.

3.2 Theory and Hypotheses

3.2.1 Trust and Social Information Processing in Teams

Trust is "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another" (Rousseau et al., 1998, p. 395). Trust may be *cognition-based* or *affect-based* (McAllister, 1995). De Jong et al. (2016, p. 1138) define cognition-based trust as deriving from "the reliability, integrity, and competence of others", while affect-based trust derives from "feelings of emotional involvement and others' genuine care and concern". A founder's cognition-based trust in the entrepreneurial team may be based on knowledge of the team's reliability, while affect-based trust may derive from feeling emotionally attached to the team. Cognition- and affect-based trust are conceptually distinct and can have different antecedents and consequences (McAllister, 1995; Schaubroeck, Peng, & Hannah, 2013).

To a considerable extent, the development of a member's trust in a team is based on their social information processing of behaviors and perspectives in the team (Costa et al., 2018; Salancik & Pfeffer, 1978). Social information processing theory argues that "individuals, as adaptive organisms, adapt attitudes, behavior, and beliefs to their social context and to the reality of their own past and present behavior and situation" (Salancik & Pfeffer, 1978, p. 226). Social information comes from the behavior and interactions between actors within the social context (Salancik & Pfeffer, 1978). Individuals especially rely on information from their immediate social environment in ambiguous and uncertain situations (Rice & Aydin, 1991). In entrepreneurial teams, given the uncertainty and ambiguity inherent in the founding process, social information may be especially important in influencing a founder's cognition-based trust

in the team. For example, contracting practices, which involve the explicit communication of expectations, provide social information on the perspectives and objectives within the team; this information may cause the founder to view the team as being predictable, thereby enhancing the founder's cognition-based trust in the team (Blatt, 2009).

Social information theory highlights the particular importance of cognition-based trust. Cognition-based trust is typically the first form of trust emerging in a team because, before becoming emotionally invested in the team through affect-based trust, a founder must be reasonably certain that the team is reliable and competent (De Jong et al., 2016). This certainty can derive from processing the social information provided by the team, such as the reliability of the team members as conveyed through their behavior and interactions (Colquitt, LePine, Zapata, & Wild, 2011; Schaubroeck et al., 2013). Indeed, in a longitudinal study of a US Army training program, Schaubroeck et al. (2013) found that a trainee's affect-based trust in his peers emerged later in the program, developing from cognition-based trust. Consistent with McAllister (1995), their results suggest that affect-based trust is causally preceded by cognition-based trust. Even when team members already know each other prior to team formation and have some affect-based trust before starting to work together, cognition-based trust deriving from social information within the team's work context may be more important for team outcomes, such as decision quality and decision commitment (Parayitam & Dooley, 2009). Specifically, cognition-based trust can convince members of each other's commitment and ability to achieve the team's goals, so that they engage in the necessary goal-oriented teamwork (De Jong et al., 2016).

In sum, extant literature suggests that studying a founder's social information processing in the context of the entrepreneurial team may provide valuable insights into the development of a founder's cognition-based trust in the team. We therefore focus on cognition-based trust in this study. In particular, we investigate the role of entrepreneurial team narratives in influencing a founder's cognition-based trust in the team.

3.2.2 Entrepreneurial Narratives

A narrative is "a sequence of events with the purpose of making a point" (Ibarra & Barbulescu, 2010, p. 137). Narratives can be studied in terms of *content* and *structure* (Mitchell et al., 2002; Walsh, 1995). Narrative content refers to a narrative's components, such as the explicit events or themes that are described, while narrative structure refers to the linkages between these components, such as their overlap or fragmentation (Ibarra & Barbulescu, 2010; Walsh, 1995). By selecting from multiple possible interpretations of past events and assembling these into a coherent narrative, individuals can make events sensible to themselves and others

(Boje, 2001). Thus, narratives enable sensemaking, the process of constructing meaning to retrospectively understand what occurs, as well as sensegiving, the process of influencing the sensemaking of others (Gioia & Chittipeddi, 1991; Weick, 1995).

Prior research on entrepreneurial narratives has studied how founders construct narratives to make sense of events, such as venture failure (Mantere et al., 2013), as well as emergent phenomena like entrepreneurial opportunities (Garud & Giuliani, 2013) and entrepreneurial identities (Jones, Latham, & Betta, 2008). For example, Mantere et al. (2013) study how different types of entrepreneurial failure narratives act as commonly available, culturally embedded resources for founders to cognitively and emotionally process venture failure. In addition to their role in sensemaking, entrepreneurial narratives have also been studied in terms of sensegiving. For instance, founders often use narratives to convince external stakeholders of their venture's legitimacy (Lounsbury & Glynn, 2001; Navis & Glynn, 2011). By facilitating both sensemaking and sensegiving, entrepreneurial narratives can provide particularly valuable internal resources to new ventures (Navis & Glynn, 2011), which are otherwise highly constrained in terms of the external resources (e.g., time, money, human capital) available to them (Baker & Nelson, 2005; Klotz et al., 2014).

The role of narratives in the context of entrepreneurial teams is poorly understood to date. However, developing a narrative about the entrepreneurial team might allow a founder to selectively synthesize fragmented – and potentially conflicting – aspects of the team into a coherent portrayal (Boje, 2001; Gartner, 2007), as well as provide resources for founders to make sense of social relationships within the entrepreneurial team (Mantere et al., 2013; Taylor, 2006). Entrepreneurial team narratives are narratives constructed by each co-founder about the team, i.e., every member of an entrepreneurial team forms their own team narrative. A founder's team narrative can include multiple topics, which are the latent concepts the narrative draws on. In contrast to narrative content, which includes all the details of what is communicated within a narrative, narrative topics synthesize the details into broad concepts to provide a higher level of abstraction (Ashforth et al., 2011). For example, topics in a founder's team narrative may be based on the team's internal structures and processes, such as its role distribution (e.g., the founder thinks the team has a clear division of labor) and how team members collaborate (e.g., the founder describes regular meetings as well as informal check-ins), as well as abstract values that the founder believes the team to embody (e.g., honesty, integrity, and accountability).

By enabling sensemaking and sensegiving, team narratives influence how members interact with one another (Ashforth et al., 2011; Ibarra & Barbulescu, 2010) – particularly when

these individuals work closely together, as is typically the case in entrepreneurial teams (Klotz et al., 2014). In this way, team narratives shape the social information that is generated within a team's social context. Thus, it is plausible that the narratives constructed within the team are to some extent accessible to all of the co-founders. In the current study, we do not concern ourselves with how founders form team narratives; rather, we seek to understand the role these narrative resources play in influencing a founder's trust in the team through shaping the team's social information.

3.2.3 Structural Dimensions of Entrepreneurial Team Narratives and Cognition-Based Trust

While many studies of entrepreneurial narratives focus on narrative content, studying the structure of narrative resources is also important, especially for the entrepreneurial team context. Entrepreneurial team narratives reflect how members construct their individual social reality within the team (Salancik & Pfeffer, 1978). Thus, investigating the structure of narrative resources can provide important insights into how entrepreneurial team members process social information in relation to each other. This aspect is important to consider, since entrepreneurial teams frequently make decisions based on how their members understand their environment (West, 2007). For example, Powell and Baker (2017) found that structural differences in how entrepreneurial team members perceived their community influenced team interactions. Specifically, when their social realities clashed, one view eventually dominated, or the team disbanded. Methodologically, studying the structure of narrative resources allows for greater contextual generalizability and comparing different team narratives, irrespective of venture-specific narrative content (Walsh, 1995). Given these important advantages of investigating the hitherto underexplored structure of entrepreneurial team narratives, the current study focuses on the role of structural dimensions of an entrepreneurial team's set of narratives in influencing a founder's cognition-based trust in their team. When we refer to an entrepreneurial team's set of narratives, we mean the set of all the entrepreneurial team narratives constructed by its members. In studying structural dimensions of entrepreneurial team narratives, we draw on the notion of narratives as resources for founders to make sense of social relationships within the entrepreneurial team. Since heterogeneity and uniqueness are key concepts that classify the nature of resources (Alvarez & Busenitz, 2001; Baker & Nelson, 2005), we consider both the *heterogeneity* of the narrative resources within a given team, as well as the *uniqueness* of the team's narrative resources within the wider new venture environment. Specifically, we discuss the role of two structural dimensions of entrepreneurial team narratives, the heterogeneity and

uniqueness of narrative topics in a team, in influencing a member's cognition-based trust in the team.

Heterogeneity of narrative resources in a team. Team narratives constructed by co-founders from the same team may consist of different narrative topics due to differences in how co-founders understand their team's environment (West, 2007). For example, while one co-founder's narrative might emphasize information about the team's division of tasks, another co-founder's narrative may instead emphasize the team's value-driven behaviors. However, the close collaboration in the team can also create a similar perception of the team and can lead to overlaps in the narrative topics incorporated by different co-founders (Powell & Baker, 2017). For example, in some entrepreneurial teams, all co-founders may emphasize the team's value-driven behaviors in their narratives. Thus, in some entrepreneurial teams, the co-founders' narratives may have more overlap compared to others. The smaller this overlap is, the higher is the heterogeneity of narrative topics in the team.

Topically heterogeneous team narratives underscore differences in how co-founders make sense of their team (Ashforth et al., 2011). These different perspectives of co-founders can create a more holistic understanding of the team, allowing the team as a whole to draw on a more diverse set of narrative resources (Ashforth et al., 2011; Brown, Humphreys, & Gurney, 2005). For instance, if one co-founder emphasizes task-related competencies, while another emphasizes the values guiding the team, the presence of these narratives within the team implies that both are relevant for how the team understands itself. Since each team member pays more attention to those aspects of the team that they personally find important, discussion and debate within the team can help foster a holistic understanding and positively influence how each co-founder views the team (Breugst & Shepherd, 2017). Specifically, with better explication of the different perspectives in the team, a founder may perceive the team to be more assured of covering any individual member's cognitive 'blind spots', and may thus have a foundation to develop greater cognition-based trust in the team as a whole (Hambrick, Cho, & Chen, 1996). For example, in a team with heterogeneous narrative topics, one co-founder might be more attentive to operational team tasks, while the other may ignore these in favor of emphasizing the team's broader purpose; during discussions, the team as a whole may emerge with a holistic awareness of both operational and purpose-driven issues. This more holistic understanding may be particularly important for new ventures, given their need to efficiently adapt to the complex and dynamic environment they typically operate in (Bantel & Jackson, 1989; Carpenter, 2002; Klotz et al., 2014). Thus, a co-founder of an entrepreneurial team with more heterogeneous narrative topics may think that they can rely upon the team to cover the cognitive blind spots

of individual co-founders, which likely connects to higher levels of cognition-based trust. Based on this reasoning, we hypothesize:

> ***Hypothesis 1:*** *Heterogeneity of topics in entrepreneurial team narratives is positively related to a founder's cognition-based trust in the team.*

Uniqueness of narrative resources in a team. Unique narrative topics are, by definition, unlikely to appear in the team narratives of most entrepreneurial teams within a given new venture environment. Unique narrative topics result from co-founders thinking of their team in specific, exclusive terms (Ashforth et al., 2011), such as 'team rules' designed to accommodate the personal preferences of co-founders, e.g., a four-day work week. By contrast, less unique topics may include buzzwords, such as 'team spirit', as well as abstract concepts, such as 'thinking big', or even mundane issues, such as standard functional roles (Lounsbury & Glynn, 2001). Since team narratives can play a sensegiving role in making favorable impressions on external stakeholders, co-founders may incorporate both unique narrative topics, to convey a sense of the venture's distinctiveness, as well as less unique narrative topics, to build the venture's legitimacy (Navis & Glynn, 2011). The larger the share of unique topics in a team's individual narratives, the higher the uniqueness of narrative resources in the team as a whole.

The uniqueness of narrative topics in a team can arguably make co-founders feel that their team is superior to other entrepreneurial teams, which in turn can grow their cognition-based trust in the team. A predominance of unique topics in a team's narratives implies that the team's own, specific qualities and priorities are more salient to team members than topics that might apply to other entrepreneurial teams. Since a founder is not only embedded within the immediate social sphere of the entrepreneurial team, but also exposed to the wider new venture environment (Grimes, 2018), the founder is likely to have some sense of the topical uniqueness of the team. For example, in many entrepreneurial environments, stakeholders such as incubators, accelerators, and entrepreneurship educators encourage founders to adopt the popular 'lean start-up' methodology (Blank, 2017; Ries, 2011). Rather than subscribing to such popular narrative topics within their environment, the members of some teams may achieve a sense of superiority by emphasizing a more unique approach to venture development (Ashforth & Mael, 1989; Brewer, 1991); as a result, a co-founder may perceive the members of their own team as being more special and competent than the members of other entrepreneurial teams, increasing their cognition-based trust in the team.

Moreover, a co-founder from a team with unique narrative resources tends to have a more specific understanding of their team, which may positively affect their cognition-based trust in the team by reducing the ambiguity inherent in the founding process. Ambiguity here

refers to the lack of clarity characterizing the actions best suited to the venture's context (e.g., a lack of established rules and institutionalized norms) (Blatt, 2009). Whereas less unique (i.e., more popular) topics can apply to most entrepreneurial teams in a given new venture environment, unique topics specifically relate to the social information of a particular team (Ashforth & Mael, 1989; Navis & Glynn, 2011). For example, while co-founders from many teams may express a popular topic, such as the importance of effective team communication, a unique topic, like a particular pattern of communication to accommodate working remotely, may be specific to one team. Due to their specificity, unique topics can reduce the ambiguity that might otherwise characterize a founder's environment (Friedman et al., 2016; Klotz et al., 2014). This is similar to the notion of within-team 'contracting practices', which refer to how "entrepreneurial team members codify and enforce the inputs, outputs, and outcomes they expect their interactions to generate" (Blatt, 2009, p. 542), thereby providing specific rules to guide the actions of team members. Just as such contracting practices build cognition-based trust by reducing ambiguity (Blatt, 2009), through their specificity, unique narrative topics can increase the clarity of team-specific objectives and approaches to achieving these. As a result, a founder's confidence – and cognition-based trust in the team – would be strengthened. Thus, we hypothesize:

> ***Hypothesis 2:*** *Uniqueness of topics in entrepreneurial team narratives is positively related to a founder's cognition-based trust in the team.*

3.2.4 The Moderating Role of Perceived Resource Scarcity

Social information processing is contingent on the environmental characteristics that an individual deals with during task accomplishment (Salancik & Pfeffer, 1978). Importantly, the social information processing perspective draws on the idea that environmental characteristics are constructed based on the judgments and actions of the individuals subject to them (Weick, 1995). Thus, an individual's understanding of environmental characteristics may influence the way in which social information shapes the individual's attitude towards their social context (e.g., the team or work unit the individual is in).

In particular, a founder's cognition is shaped not only by the availability of independent resources but also by how these resources interact (Alvarez & Busenitz, 2001). We therefore suggest that a founder may interpret narrative resources differently based on how they perceive resource scarcity in the venture's external environment shaping the relationship between narratives and their cognition-based trust in the team. Resource scarcity is "the extent to which the available resources are not sufficient to support the sustained growth or survival of the [venture]" (Faraj & Yan, 2009, p. 608). For a founder of an early-stage venture, resource

scarcity is an especially salient environmental characteristic (Baker & Nelson, 2005; Klotz et al., 2014; Vanacker, Forbes, Knockaert, & Manigart, 2020). Entrepreneurial teams face resource scarcity in terms of financial and physical resources, as well as the time, attention, and energy that co-founders can devote to different tasks (Ravasi & Turati, 2005). However, regardless of the objective availability of resources, founders may differ in their perceptions of resource scarcity (Edelman & Yli-Renko, 2010). Drawing on social information processing theory, we suggest that a founder's perceived resource scarcity can influence the social processes involved in the relationship between entrepreneurial team narrative resources and the founder's cognition-based trust in the team. Specifically, perceived resource scarcity may moderate the relationships between the structural dimensions of entrepreneurial team narratives and a founder's cognition-based trust in the team.

First, we consider the influence of perceived resource scarcity on the relationship between the heterogeneity of narrative resources and a founder's cognition-based trust in the team. A founder in an entrepreneurial team that constructs topically heterogeneous team narratives tends to think about the team in a different way to their co-founders and may therefore be more likely to disagree with them on how to allocate the team's attention and energy (Ashforth et al., 2011; Salancik & Pfeffer, 1978). When such a founder perceives the venture environment as having severely limited resources, they may be more conscious of the opportunity costs associated with allocating the attention and energy available to any given task or function within the venture (Pfeffer & Salancik, 2003). For example, one co-founder might emphasize the importance of the team's technical competencies and think energy should be invested in enhancing these, whereas another co-founder might emphasize the importance of the team's sales-related activities and think attention should be allocated towards improving sales. While different perspectives can positively influence cognition-based trust, if a co-founder perceives a high level of external resource scarcity, the disagreements created may cause them to doubt the other's judgment. The overall positive influence of heterogeneous narrative topics on this co-founder's cognition-based trust in the team is thus diminished. In contrast, when a founder perceives the resources available to be sufficient for satisfying the preferences of all team members, there is less potential for such disagreements, so that the relationship between topical heterogeneity and the founder's cognition-based trust in the entrepreneurial team is more positive.

Additionally, debates triggered by topically heterogeneous perspectives in the team can themselves become resource intensive, particularly in terms of the team's time, attention, and energy (Breugst & Shepherd, 2017). If a founder from a topically heterogeneous team perceives

severe resource constraints, they may not appreciate the diversity of insights generated (Carpenter, 2002). Instead, the founder may be inclined to view lengthy debates to bridge different perspectives as a waste of the team's already limited resources, and when debates do take place, these may not necessarily be satisfactorily resolved (Breugst & Shepherd, 2017). The founder may be less able to depend on the team members working in the same direction, so that their cognition-based trust in the team is less likely to be high under high perceived resource scarcity. In contrast, when a founder perceives low resource scarcity, they may be more willing to devote sufficient time and energy to thoroughly consider the perspectives of different team members and appreciate their benefits, thus strengthening the positive relationship between the heterogeneity of topics in team narratives and the founder's cognition-based trust in the team.

Overall, our arguments suggest that perceived availability of resources in a venture's external environment and heterogeneity of team narrative resources complement each other, which is likely to increase a founder's cognition-based trust in the entrepreneurial team. Hence, we hypothesize:

> ***Hypothesis 3:*** *Perceived resource scarcity negatively moderates the relationship between the heterogeneity of topics in entrepreneurial team narratives and a founder's cognition-based trust in the team.*

Next, we consider the influence of a founder's perceived resource scarcity on the relationship between uniqueness of narrative resources in an entrepreneurial team and the founder's cognition-based trust in the team. When co-founders construct topically unique team narratives, they highlight the team's distinctiveness within the broader new venture environment (Ashforth et al., 2011). However, a founder who perceives high resource scarcity may also think it is important for those outside the venture – especially external resource providers, such as investors (Lounsbury & Glynn, 2001) – to understand the team (Faraj & Yan, 2009). Since such stakeholders may work with multiple new ventures, they are likely to be more familiar with popular narrative topics in their environment than topics unique to a team (Navis & Glynn, 2011). A founder perceiving high resource scarcity in a topically unique team may be less appreciative of the team's distinctiveness, as it may be harder to predict whether the venture will appear legitimate to resource providers (Navis & Glynn, 2011); this may weaken the founder's expectations of the team's ability to convince resource providers. In contrast, when a founder perceives low external resource scarcity, potential perceptions of resource providers may seem less important, thus strengthening the positive relationship between topical uniqueness and the founder's cognition-based trust in the team.

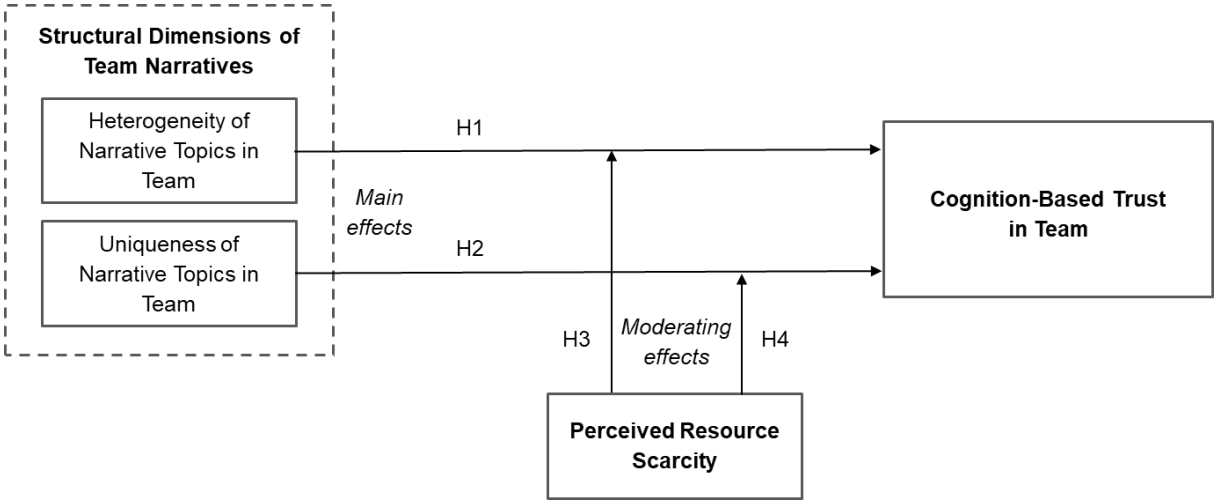
The relationship between the uniqueness of narrative resources and cognition-based trust within the entrepreneurial team may also be weakened under high perceived resource scarcity since less unique narrative topics include vague or abstract concepts, such as 'creativity' and 'drive' (Channell, 1994). Although traditionally viewed as a linguistic shortcoming, such vagueness has more recently been argued to be a potential strategic asset (Guo, Yu, & Gimeno, 2017). Vague information gives individuals flexibility in developing interpretations that are closer to what they desire (Mishra, Mishra, & Shiv, 2011). As such, vague language can be used to increase perceptions of alignment with stakeholders outside of organizations, such as between the team and external resource providers (Gioia, Nag, & Corley, 2012). When a founder perceives high resource scarcity, creating such alignment becomes particularly important (Navis & Glynn, 2011). Perceived resource scarcity can thus be alleviated by vague, equivocal language in the form of less unique narrative topics (Gioia et al., 2012). In contrast, if a founder perceives the resources for the venture to be sufficient, they may be less concerned about alignment with resource providers and more confident in articulating a specific understanding of the team through unique narrative topics, thus strengthening the positive relationship between topical uniqueness and the founder's cognition-based trust in the entrepreneurial team.

In sum, our theorizing suggests that perceived availability of resources in a venture's external environment enables a founder to better benefit from the uniqueness of team narrative resources in terms of higher levels of cognition-based trust in the entrepreneurial team. Hence, we hypothesize:

> ***Hypothesis 4:*** *Perceived resource scarcity negatively moderates the relationship between the uniqueness of topics in entrepreneurial team narratives and a founder's cognition-based trust in the team.*

Figure 4 shows our conceptual model of the relationships between team narrative structures and a founder's cognition-based trust in the team.

Figure 4. Conceptual model of team narratives and cognition-based trust



3.3 Data and Method

To test our hypotheses, we used a sample of 102 founders from 43 complete, early-stage entrepreneurial teams. We collected team narratives through interviews with all the founders of all the teams, and five weeks later, asked them to complete a survey to measure cognition-based trust (McAllister, 1995) and perceived resource scarcity (Faraj & Yan, 2009). We included those team members that were actively involved in strategic decision making and operations (Klotz et al., 2014). We focused on early-stage ventures since they often deal with high levels of uncertainty, a condition under which social information may be especially relevant for influencing each co-founder's cognition-based trust in the team.

3.3.1 Sampling Procedure and Sample

We sampled ventures run by entrepreneurial teams for less than six years, consistent with Amason, Shrader, and Tompson (2006), and restricted our sample to ventures located in Germany. We identified potential participants that met these sampling criteria through filtered searches on online databases of regional new ventures, incubators, accelerators, and startup fairs. From our attempts to contact these ventures, we received email replies from 285 ventures. While 145 ventures were unable to participate due to time constraints, we scheduled interviews with the founders of the remaining 140 ventures. In 77 of these cases, we could interview complete entrepreneurial teams. As we derived our structural dimensions from the team narratives (extracted from the interviews) of all the co-founders of each team, it was important to only use completely interviewed teams in our final sample. Moreover, for operationalizing the structural dimensions using automated topic modeling (our method of analysis, which we explain below), it was essential that all the team narratives be in one language – in our case, German. Since several teams in our sample included co-founders who did not speak German

and were interviewed in English –consistent with the observation that innovative (e.g., high technology) ventures are often run by international teams (Nielsen & Nielsen, 2013) – we excluded teams in which not all interviews were conducted in German, resulting in a final sample of 102 founders of 43 complete entrepreneurial teams.

On average, the founders in our final sample were 34.54 years old, with a standard deviation (SD) of 7.02 and 14.71% were female. In terms of their highest level of education, 13.73% had a doctoral degree, 75.49% had one or more university degrees below the doctoral level, 4.9% completed an apprenticeship, and 5.88% graduated from high school. Founders also had different fields of education. 31.37% had an educational background in engineering, 28.43% in business or economics, 15.69% in the natural sciences or mathematics, 9.8% in information technology, 4.9% in medicine or another health sector, 3.92% in the social sciences, 1.96% in the creative arts, 0.98% in teaching, and 2.94% indicated "other". Entrepreneurial teams had on average 2.88 co-founders (SD = 1.06); team sizes ranged from 2 to 6 co-founders. This team size is consistent with many other studies on (young) entrepreneurial teams (e.g., Breugst & Shepherd, 2017; Friedman et al., 2016). The average team age was 3.18 years (SD = 1.46). Ventures employed 6.31 full-time employees on average (SD = 6.17) and varied in terms of the primary industry in which they operated: 61.76% were in the computer hardware/software industry, 12.75% were in the services industry, 17.65% were in the material, physical, or life sciences industry, and 7.84% were in the consumer products industry.

3.3.2 Structural Dimensions of Entrepreneurial Team Narratives

We derived the narrative topics and structural dimensions from the entrepreneurial team narratives that emerged during semi-structured interviews. We interviewed each team's co-founders separately to reduce response bias. We conducted and recorded interviews at the venture's office whenever possible (48 interviews), or via a video-conferencing software or phone call (59 interviews). In order to elicit team narratives, we asked all founders the same set of open-ended questions on the following subjects: (1) general information on the entrepreneurial team, (2) what made the entrepreneurial team special, (3) team values or other team topics of importance to the interviewee, (4) the distribution of roles within the team, and (5) past interactions and situations experienced within the team (see Appendix 7.2.1 for our interview guideline). For instance, an excerpt from a founder's team narrative is:

> "We talk very openly and honestly in the team – also about things that are not nice at all. This is very important for us, as well as exercising a certain amount of caution. So we are trying, even now after we have secured financing, to remain strict about spending. When we travel and need hotels, we book very cheaply, and try to travel as cheaply as possible, and so on. It is very important to us that our team is careful about

using the resources that we have."

Deriving narrative topics. We used automated topic modeling with Latent Dirichlet Allocation (LDA) to derive narrative topics from our full set of entrepreneurial team narratives. LDA (Blei, Ng, & Jordan, 2003) and other topic modeling techniques have been used in a variety of disciplines and have recently also received increasing attention in entrepreneurship and management research (Hannigan et al., 2019; Kibler, Mandl, Farny, & Salmivaara, 2021). LDA assumes that the full text corpus (i.e., our full sample of entrepreneurial team narratives) is generated by probabilistically selecting words from a set of latent topics. A topic consists of a set of words that are statistically likely to co-occur and that may together be considered to represent some broader concept. For example, the team narrative displayed above could be characterized by words like 'caution', 'careful', and 'strict'. Meanwhile, if a founder spoke about the agile product development that the team engages in, a topic manifesting this latent concept may include words such as 'test', 'Scrum', and 'sprint'.

To derive narrative topics, we first combined all the team narratives into a single text corpus and cleaned the corpus. Cleaning the corpus involved converting all the words to lowercase, removing punctuation, and removing identifying information (e.g., team members' names, venture names). We also removed *stop words*, which are short, common words, such as articles, typically removed before processing text due to their low analytical value (Kobayashi, Mol, Berkers, Kismihok, & Den Hartog, 2018). Since our texts were all in German, we removed a standard list of German stop words using the R package "stopwords" (Kenneth Benoit, David Muhr, & Kohei Watanabe, 2017). We now represented the text corpus as a narrative-word matrix A with m rows, one for each co-founder's team narrative, and n columns, one for each word in the corpus. Each element A_{ij} stored the frequency with which the j-th word appeared in the i-th co-founder's team narrative. We next computed the term frequency inverse document frequency (TF-IDF), a commonly used statistic that reflects the importance of each word to each narrative in the corpus (Kobayashi et al., 2018). The TF-IDF is the product of the term frequency (the frequency of a word in a narrative) and the inverse document frequency (IDF). The IDF of a word is found by dividing the total number of narratives by the number of narratives in which the word appears and taking the natural logarithm of the result. To ensure our cleaned corpus included only the words most important to each of the narratives, we excluded all words with a TF-IDF below the median.

Second, using the R "topicmodels" package (Hornik & Grün, 2011), we iteratively applied LDA to the full set of team narratives in our sample in order to generate k narrative

topics. In order to determine the optimal k, an important input parameter for LDA, following Griffiths and Steyvers (2004), we calculated the log-likelihoods of topic models with different values of *k*. The log-likelihood was maximized at $k = 20$, giving us the optimal number of topics to use (see Appendix 7.2.2). The top words for a given topic are the words with the highest probability of appearing in that topic and can also form the basis for interpreting what the topic means. For instance, Topic 2 seemed to manifest the latent concept of remote working, with its top words being "remote", "earn", "quiet", "watch", and "complete". The following is an excerpt from a team narrative that incorporated Topic 2:

> "What we are testing […] is working a bit more remotely, so that the team doesn't always have to be onsite […], because we – that is, [my co-founder] and I – travel quite a lot for the business. The developers travel less often; they work here [in the office] or from home and we will generally make things flexible and see how well it can work completely remotely. […] At the moment, I try to be reachable three days a week, but then say, OK, the rest of the time [the team members] need to work independently and leave me quiet time to complete my own work."

The result of applying LDA to our sample of team narratives could be represented by two matrices, a word-topic matrix B and a narrative-topic matrix C. Each element B_{ij} stored the probability with which the i-th word appeared in the j-th narrative topic. Each element C_{ij} stored the probability with which the i-th co-founder's team narrative included the j-th narrative topic. In order to create a clear cutoff for whether a given narrative topic was represented in a co-founder's team narrative, we dichotomized the elements in matrix C, based on whether the probability was above (recoded as 1) or below (recoded as 0) the average of all the probabilities in the matrix (Kakatkar, de Groote, Füller, & Spann, 2018). Using the dichotomized narrative-topic matrix, we calculated the heterogeneity and uniqueness of the narrative topics included in each team's set of narratives. We explain this procedure in the following sections (for a detailed worked example, see Appendix 7.2.3).

Measuring heterogeneity of narrative topics. Heterogeneity of narrative topics refers to how much narratives in a team vary in terms of their constituent topics. Since in our case each narrative corresponds to a different co-founder, the heterogeneity of narrative topics reflects diversity in how co-founders perceive their team. We operationalized the heterogeneity measure using the Euclidean distance method corrected for differences in team size (Biemann & Kearney, 2010; Harrison & Klein, 2007). For example, suppose that the vectors $p = [0,0,0,0,0,1,1,1,1,1,0,0,0,0,1,0,0,0,0,0]$ and $q = [0,0,1,1,1,0,0,0,1,1,0,0,0,1,1,0,1,0,0,0]$ represent two rows from narrative-topic matrix *C*, each corresponding to a different co-founder's narrative from the same team. The j-th element of each vector denotes the absence

(0) or presence (1) of the j-th topic. Notice that while some topics feature in both narratives p and q, others do not. The pairwise Euclidean distance between each element of p and q, namely $\sqrt{\sum_{j=1}^{n}(p_j - q_j)^2} = \sqrt{8} \approx 2.83$, quantifies the topical heterogeneity between the narratives of the two co-founders. For teams with more than two co-founders, we averaged each team's pairwise Euclidean distances. To reduce the effect of outliers, we rescaled the average Euclidean distance for each team to be between 0 and 1.

Measuring uniqueness of narrative topics. Uniqueness of narrative topics in a team refers to the distinctiveness of the team's topics relative to those of other teams. To measure uniqueness, we used the narrative-topic matrix to create a network in which each node represented a narrative topic. Two nodes were connected by an edge if the corresponding topics co-occurred within at least one co-founder's team narrative. Each edge was weighted by the co-occurrence frequency of the connected topics within the full sample of team narratives. We operationalized the uniqueness of each narrative topic using its weighted degree centrality in the narrative topic network (Freeman, 1977, 1978). Specifically, uniqueness was computed for each node as the negated weighted sum of all the edges that were connected to it. To derive the uniqueness of narrative topics at the team level, we averaged the uniqueness of each topic that featured in the team's narratives and rescaled it to be between 0 and 1.

3.3.3 Survey Measures

Cognition-based trust. We measured the dependent variable of a founder's cognition-based trust in the team drawing on the six-item cognition-based trust scale developed by McAllister (1995) adapted for the entrepreneurial team context. We used a Likert-type scale with the anchors 1 (not at all) and 7 (completely). The full items we used are in Appendix 7.2.4. The Cronbach's alpha for cognition-based trust was 0.80, which is well above the suggested cutoff of 0.70 (Hair et al., 2006).

Perceived resource scarcity. We measured the moderator, perceived resource scarcity, based on each individual founder's perception, rather than using a team-wide or industry-wide measure, since we theorize that it is the perception of resource scarcity that moderates the relationships between the structural dimensions of team narratives and the founder's trust in the team. Moreover, the level of resource scarcity perceived by each founder may vary even between firms from the same industry or individuals in the same venture (Edelman & Yli-Renko, 2010). To measure resource scarcity, we adapted the three-item scale from Faraj and Yan (2009) to the entrepreneurial team context. We used a Likert-type scale with the anchors 1 (not at all) and 7 (a lot). The full items we used are in Appendix 7.2.4. The Cronbach's alpha

for resource scarcity was 0.61 and thus below the cutoff suggested by Hair et al. (2006). But this value is perhaps unsurprising given that there are few items to capture the construct in a quite broad way, which is likely to reduce the alpha (Cortina, 1993). Specifically, Item 1, "Since its start, the founding team has found it critical to preserve and stretch available resources to accomplish its tasks." and Item 2, "Since its start, the founding team has had to carry out its tasks under serious resource constraints." differ from Item 3, "Since its start, the founding team has experienced an ongoing need for additional resources to get its job done." Whereas the first two items highlight the lack of resources available to the team, the third item could also apply to a team that continuously needs additional resources *and* manages to attain these. Cronbach's alpha does in fact rise to 0.68 without Item 3. We therefore included the full scale and checked the robustness of our results by running additional regressions with just the first two items and also each of the three items individually.

Control variables. We measured theoretically relevant control variables to check that our results are stable. However, following Spector and Brannick (2011), we also produced regression results excluding the control variables.

At the individual level, we controlled for participants' age and gender (0 = male, 1 = female), since literature suggests older people and women may be more trusting (Colquitt et al., 2011) and demographic differences can influence how individuals understand themselves and their context (Ibarra & Barbulescu, 2010). We also controlled for participants' founding experience and degree of education, as these may increase a founder's perception of their own ability to select trustworthy co-founders and thus strengthen cognition-based trust in the team. Additionally, since shared prior history can positively influence cognition-based trust and how individuals perceive one another, we controlled for the closeness of each founder's prior relationship with the team (Fulmer & Gelfand, 2012). To measure this, we asked each founder to indicate their prior relationship with each co-founder (e.g., "Friend or acquaintance you have worked with", "Stranger before joining the founding team") and coded these responses on a scale of 1 (the closest prior relationship) to 9 (the most distant prior relationship). For each founder, we then took the average of the closeness of their prior relationships with all the co-founders. Finally, since an important alternative explanation for a founder's cognition-based trust in the entrepreneurial team may be the extent to which a founder feels emotionally connected to the team (Costa et al., 2018), we also controlled for each founder's affect-based trust in the team. To do so, we adapted the five-item affect-based trust scale developed by McAllister (1995) for the entrepreneurial team context, using a Likert-type scale with the

anchors 1 (not at all) and 7 (completely). The full items we used are in Appendix 7.2.4. The Cronbach's alpha for affect-based trust was 0.81.

At the team level we controlled for team age because the longer a team works together, the more time there is for each member's cognition-based trust in the team to grow and for team members' perceptions of the team to become more homogenous and specific (i.e., for team narratives to become less topically heterogeneous and more unique). Furthermore, we controlled for team size, as larger teams may require greater coordination, which could make it more difficult to build up the reliability that serves as a basis for cognition-based trust (Haleblian & Finkelstein, 1993; Shaw & Harkey, 1976). Moreover, larger teams may be more topically heterogeneous, since they may cover a broader range of perspectives, as well as more topically unique, since the team may have developed more specific and specialized processes to coordinate the larger number of members. We also controlled at the team-level for diversity in co-founders' educational backgrounds, because shared backgrounds can increase trust (Costa et al., 2018; Fulmer & Gelfand, 2012) and result in less topically heterogeneous and unique team narratives (Ashforth et al., 2011). Following recommendations from extant literature (Biemann & Kearney, 2010; Harrison & Klein, 2007), we measured each team's educational diversity using Blau's index corrected for differences in team size: $1 - \sum \frac{N_i(N_i-1)}{N(N-1)}$, where N_i is the number of co-founders in the i-th category (of educational background) and N is the total number of co-founders. Finally, we controlled for the primary industry in which the venture operated (0 = product-based firm, 1 = service-based firm), since this can influence interactions within the team (Breugst & Shepherd, 2017; Ucbasaran, Lockett, Wright, & Westhead, 2003) and thus team narrative and trust formation.

3.3.4 Statistical Analysis

Our theoretical model captures variables at different levels of analysis. Specifically, we predict a founder's cognition-based trust in teammates at the individual level based on the team-level structural dimensions of entrepreneurial team narratives. Further, the moderator, resource scarcity, is a perceptual variable of each individual founder, thus an individual-level variable. To cover this nested nature of our data, we initially considered applying Hierarchical Linear Modeling (Raudenbush & Bryk, 2002). However, running the null model and computing the intraclass correlation (3.32×10^{-24}) indicated that the more parsimonious approach of running regression models with cluster-robust standard errors would be more appropriate (Aguinis, Gottfredson, & Culpepper, 2013). To test our hypotheses, we used censored regression models (lower limit: 1, upper limit: 7) to account for the measurement of the dependent variable,

cognition-based trust, using survey responses on a Likert-type scale of 1 to 7.

3.4 Results

3.4.1 Descriptive Statistics

Table 8 displays the means, standard deviations, correlations, and (where applicable) the Cronbach's alphas of the variables. Heterogeneity of narrative topics in a team was positively correlated with a founder's cognition-based trust in the team ($r = 0.17$, $p < 0.1$), while uniqueness of narrative topics in a team was negatively correlated with a founder's cognition-based trust in the team ($r = -0.25$, $p < 0.05$). Four control variables were also correlated with a founder's cognition-based trust in the team. As expected, a founder's age, education, and affect-based trust in the team, as well as the team's age, were all positively correlated with the founder's cognition-based trust in the team (age: $r = 0.26$, $p < 0.01$; education: $r = 0.21$, $p < 0.05$; affect-based trust: $r = 0.64$, $p < 0.001$; team age: $r = 0.17$, $p < 0.1$), while team size was negatively correlated with a founder's cognition-based trust in the team ($r = -0.32$, $p < 0.01$).

3.4.2 Hypothesis Testing

We built up stepwise censored regression models, as shown in Table 9. In Model 1, we included only the control variables. In this model, only a founder's age, team size, and affect-based trust in the team had significant coefficients (age: $b = 0.02$, $p < 0.1$; team size: $b = -0.18$, $p < 0.01$; affect-based trust: $b = 0.69$, $p < 0.001$). In Model 2, we included only the structural dimensions of the team narratives and resource scarcity, as well as the interaction between each of the structural dimensions and perceived resource scarcity. Here, heterogeneity of narrative topics in a team and uniqueness of narrative topics in a team had significant positive coefficients (heterogeneity: $b = 6.12$, $p < 0.001$; uniqueness: $b = 3.30$, $p < 0.05$). Moreover, the interaction between heterogeneity of narrative topics in a team and perceived resource scarcity was significant and negative ($b = -1.09$, $p < 0.01$). The interaction between uniqueness of narrative topics in a team and perceived resource scarcity was also significant and negative ($b = -0.89$, $p < 0.001$). In Model 3, we included all the control variables and both structural dimensions; none of our main effects had significant coefficients. In Model 4, we added to Model 3 by including perceived resource scarcity; again, none of our main effects had significant coefficients.

Table 8. Descriptive statistics

		M	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1)	Cognition- based trust	6.08	0.79	(0.80)												
(2)	Heterogeneity of narrative topics in team	0.57	0.23	0.17†	(–)											
(3)	Uniqueness of narrative topics in team	-0.39	0.19	−0.25*	−0.31**	(–)										
(4)	Perceived resource scarcity	5.24	1.19	−0.02	−0.17†	−0.01	(0.61)									
(5)	Age	34.54	7.02	0.26**	0.17†	−0.40***	0.15	(–)								
(6)	Gender [a]	0.15	0.36	0.02	0.05	0.17†	−0.09	−0.06	(–)							
(7)	Education	4.57	1.24	0.21*	0.17†	−0.25*	−0.04	0.38***	−0.01	(–)						
(8)	Founding experience	0.83	1.71	0.01	0.08	−0.13	0.13	0.28**	−0.06	−0.17†	(–)					
(9)	Prior relationship	6.79	1.28	−0.08	−0.07	−0.05	0.01	−0.14	−0.01	−0.06	−0.06	(–)				
(10)	Affect-based trust	6.16	0.81	0.64***	0.12	−0.19†	−0.13	0.04	0.01	0.09	−0.16	0.02	(0.81)			
(11)	Team size	2.88	1.06	−0.32**	−0.09	0.64***	−0.07	−0.31**	0.13	−0.24*	−0.06	0.24*	−0.13	(–)		
(12)	Team age	3.18	1.46	0.17†	−0.01	−0.22*	−0.11	0.24*	−0.04	0.14	−0.05	−0.16	0.18†	−0.41***	(–)	
(13)	Team educational diversity	0.67	0.40	−0.04	0.01	0.18†	0.24*	0.11	0.06	0.07	−0.04	−0.01	−0.17†	0.08	−0.27**	(–)
(14)	Industry [b]	0.13	0.34	0.12	0.31**	−0.10	−0.25*	−0.09	0.01	0.16	0.04	−0.11	0.12	−0.18†	−0.03	−0.057

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Notes: N = 102.
M = mean, SD = standard deviation
Cronbach's alpha (if applicable) is reported on the diagonal.
[a] 0 = male, 1 = female
[b] 0 = product-based firms, 1 = service-based firms

Table 9. Censored regression models to predict a founder's cognition-based trust in the entrepreneurial team

	Model 1			Model 2			Model 3			Model 4			Model 5 (full model)			Model 6		
	Coeff.	Robust SE	p	Coeff.	Robust SE	p	Coeff.	Robust SE	p	Coeff.	Robust SE	p	Coeff.	Robust SE	p	Coeff.	Robust SE	p
Constant	1.77	0.62	0.006	3.88	1.03	0.000	1.84	0.64	0.005	1.81	0.82	0.030	1.07	1.00	0.289	1.32	1.12	0.241
Age	0.02	0.01	0.063				0.02	0.01	0.052	0.02	0.01	0.057	0.02	0.01	0.081	0.01	0.01	0.127
Gender [a]	0.11	0.18	0.56				0.07	0.18	0.705	0.07	0.19	0.706	0.03	0.17	0.874	0.03	0.18	0.86
Education	0.05	0.05	0.391				0.05	0.05	0.402	0.05	0.05	0.400	0.05	0.06	0.389	0.06	0.06	0.327
Founding experience	0.03	0.04	0.409				0.03	0.04	0.385	0.03	0.04	0.384	0.04	0.04	0.284	0.04	0.04	0.325
Prior relationship	−0.17	0.05	0.749				0.00	0.05	0.949	0.00	0.05	0.95	−0.00	0.05	0.944	−0.00	0.05	0.951
Affect-based trust	0.69	0.07	0				0.70	0.07	0.000	0.70	0.07	0.000	0.66	0.06	0.000	0.69	0.07	0.000
Team size	−0.18	0.06	0.004				−0.25	0.09	0.006	−0.25	0.10	0.010	−0.23	0.09	0.012	−0.24	0.09	0.008
Team age	−0.05	0.05	0.343				−0.05	0.05	0.267	−0.05	0.05	0.329	−0.04	0.05	0.43	−0.04	0.05	0.391
Team educational diversity	0.13	0.15	0.399				0.08	0.15	0.586	0.08	0.15	0.609	0.09	0.15	0.566	0.10	0.15	0.517
Industry [b]	0.06	0.30	0.842				−0.03	0.30	0.926	−0.02	0.29	0.934	−0.08	0.29	0.791	−0.12	0.31	0.698
Heterogeneity of narrative topics in a team				6.12	1.77	0.001	0.38	0.30	0.207	0.39	0.31	0.214	3.53	1.27	0.007	3.08	1.52	0.046
Uniqueness of narrative topics in a team				3.30	1.38	0.019	0.59	0.54	0.282	0.58	0.55	0.291	2.85	1.25	0.025	2.65	1.08	0.016
Perceived resource scarcity [c]				0.28	0.19	0.141				0.00	0.06	0.936	0.16	0.14	0.229	0.09	0.14	0.534
Heterogeneity of narrative topics in team × Perceived resource scarcity				−1.09	0.33	0.001							−0.61	0.24	0.012	−0.45	0.24	0.074
Uniqueness of narrative topics in team × Perceived resource scarcity				−0.89	0.24	0.000							−0.48	0.16	0.005	−0.38	0.14	0.008

Notes: N = 102; cluster-robust standard errors are in parentheses.

[a] 0 = male, 1 = female

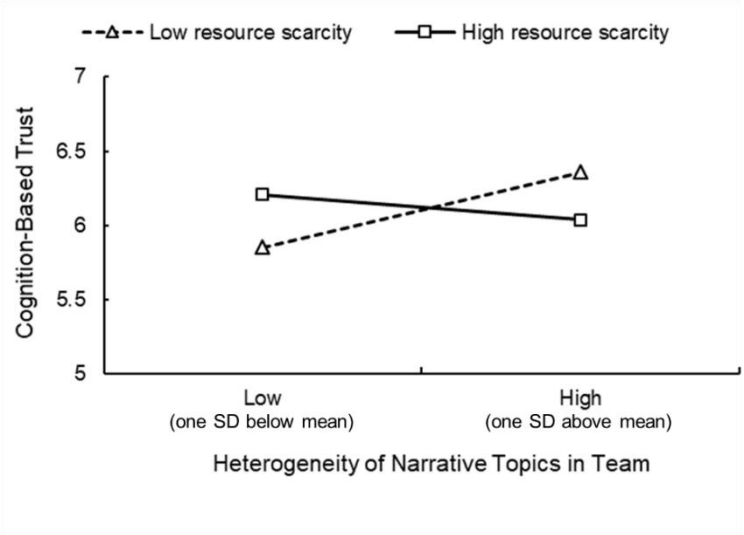
[b] 0 = product-based firms, 1 = service-based firms

[c] Measured using all three items in Models 1-5. In Model 6, only Item 1 and 2 are used.

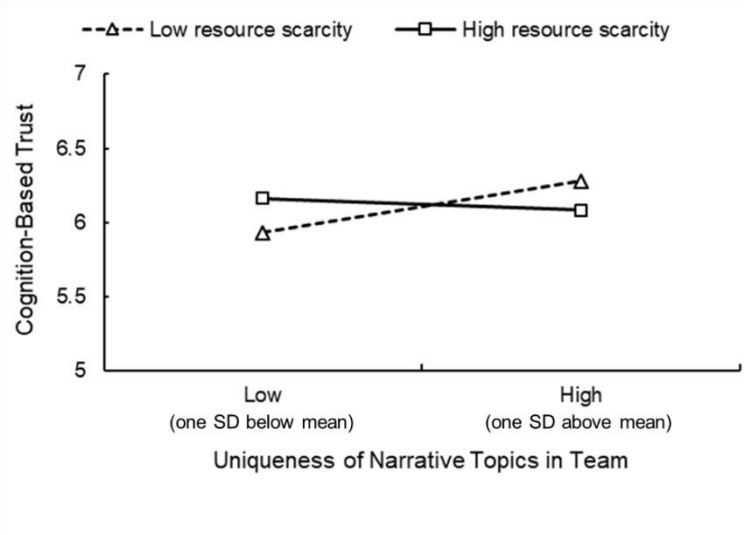
Finally, in Model 5, we included both interaction effects. Consistent with our theorizing, which suggested the presence of interactions, and the recommendations by Aiken and West (1991), we interpreted all effects based on Model 5, the full model. Consistent with Hypothesis 1, heterogeneity of narrative topics in a team had a significant positive coefficient ($b = 3.53$, $p < 0.01$) and, consistent with Hypothesis 3, this relationship was significantly and negatively moderated by perceived resource scarcity ($b = -0.61$, $p < 0.05$). Moreover, consistent with Hypothesis 2, uniqueness of narrative topics in a team had a significant positive coefficient ($b = 2.85$, $p < 0.05$) and, consistent with Hypothesis 4, this relationship was significantly and negatively moderated by perceived resource scarcity ($b = -0.48$, $p < 0.01$). The interaction effects in Hypotheses 3 and 4 are visualized in Figure 5.

Figure 5. Interaction of structural dimensions of team narratives and resource scarcity

a) Interaction of Heterogeneity of Narrative Topics in Team and Resource Scarcity



b) Interaction of Uniqueness of Narrative Topics in Team and Resource Scarcity



We conducted multiple robustness checks with different model specifications and ways of operationalizing the variables. In particular, in Model 6 in Table 9, we ran the full model with operationalizing perceived resource scarcity with only its first two items, which produced results consistent with our hypotheses. Heterogeneity of narrative topics in a team ($b = 3.08$, $p < 0.05$) and uniqueness of narrative topics ($b = 2.65$, $p < 0.01$) retained significant positive coefficients. The coefficient of the interaction between heterogeneity and perceived resource scarcity was not significant at a conventional level, but the direction was also negative ($b = -0.45$, $p = 0.07$). The interaction between uniqueness and perceived resource scarcity was significant and negative ($b = -0.38$, $p < 0.01$). Appendix 7.2.5 shows regression results for our model with operationalizing perceived resource scarcity with each of its items separately and running our full model with Ordinary Least Squares (OLS) regression; the results are largely consistent with our hypotheses.

3.5 Discussion and Conclusion

Extant literature suggests that trust – and cognition-based trust, in particular – is crucial for entrepreneurial teams to work effectively (De Jong & Elfring, 2010; Gemmell, Boland, & Kolb, 2012; Simons & Peterson, 2000). Moreover, entrepreneurial team narratives provide the resources for founders to make sense of social relationships within the entrepreneurial team (Mantere et al., 2013; Taylor, 2006). We draw on social information processing theory to theorize about the relationship between structural dimensions of entrepreneurial team narrative resources and a founder's cognition-based trust in the team. We find that the heterogeneity and uniqueness of narrative resources in a team are positively related to a founder's cognition-based trust in the team and that these relationships are negatively moderated by the founder's perceived external resource scarcity.

We contribute to theory on trust in entrepreneurial teams in multiple ways. First, much of the work on the development of an individual's trust in their team highlights the importance of members' shared history and backgrounds (Beckman et al., 2007; Eisenhardt & Schoonhoven, 1990). However, these factors are likely to quickly lose importance compared to factors emerging from the team's context, such as behaviors and perspectives within the team—i.e., social information (Costa et al., 2018; Salancik & Pfeffer, 1978). Indeed, our study suggests that a considerable amount of cognition-based trust may develop in the post-founding phase through the social information processing arising from co-founders' team narrative resources, but that this relationship is contingent on a founder's perceived venture-external resource scarcity, a characteristic constraint for new ventures (Baker & Nelson, 2005; Klotz et al., 2014; Singh, Tucker, & House, 1986). Thus, future studies on trust in entrepreneurial teams

should not only pay greater attention to factors that emerge from entrepreneurial team collaboration, but also to the role played by the venture environment.

Second, we extend our theoretical understanding of the antecedents of trust in entrepreneurial teams. Existing work has documented the positive influence of shared characteristics for developing trust (Fulmer & Gelfand, 2012). However, heterogeneity in co-founders' disciplines broadens the team's cognitive capabilities, such that co-founders might think they can rely on the team (Carpenter, 2002; Hambrick et al., 1996) and therefore improve their cognition-based trust in the team; it is less clear whether the same holds true for heterogeneity in co-founders' team narratives. In fact, similarity attraction and homophily theories (Byrne et al., 1971; Ruef, Aldrich, & Carter, 2003) would suggest heterogeneity in co-founders' perceptions of the entrepreneurial team (i.e., heterogeneity in narrative topics in the team) may be detrimental for trust (Harrison & Klein, 2007; Locke & Horowitz, 1990). In contrast, our social information processing-based arguments suggest that heterogeneity of narrative topics within an entrepreneurial team may actually be positively related to a founder's cognition-based trust in the team. Thus, the dynamic and complex environments of entrepreneurial teams can make heterogeneity in social information processing an important resource for trust development.

Third, we contribute to literature on the antecedents of trust in entrepreneurial teams by not only investigating the influence of factors related to the entrepreneurial team itself, but also by investigating the influence of the entrepreneurial team's embeddedness within its broader entrepreneurial environment. To do so, we study the uniqueness of narrative topics in the team, which depends on how the co-founders of other early stage ventures in the same environment understand their team (Ashforth et al., 2011; Navis & Glynn, 2011). Literature increasingly recognizes the importance of the environment in which a new venture operates (Lounsbury, 2007; Lounsbury & Glynn, 2001; Marti, Courpasson, & Barbosa, 2013). While prior studies have focused on macro-level outcomes, such as the development of an entrepreneurial culture within a given environment (Marti et al., 2013), we emphasize the micro-level relationship between the entrepreneurial team and its environment by explaining how a founder's cognition-based trust in the team may be built through developing unique understandings within the team relative to the environment. Theory on the antecedents of trust in entrepreneurial teams can be extended by investigating the relationship between teams and their environments in greater depth.

Additionally, we contribute to theory on entrepreneurial narratives. Whereas many prior studies focus on narrative content, we extend existing work by shedding light on narrative

structure to gain important insights into how entrepreneurial team members process social information in relation to each other. From work on narrative content we know that narratives enable sensemaking by allowing the narrators to select from different interpretations to build their own social reality (Boje, 2001; Ibarra & Barbulescu, 2010; Weick, 1995). Entrepreneurial narratives can be especially helpful resources for making sense of ambiguous situations (Boje, 2001; Lounsbury & Glynn, 2001), such as venture failure (Mantere et al., 2013). Since entrepreneurial narratives allow founders to selectively include information in their portrayal of events and concepts, founders from the same social context (e.g., co-founders from the same entrepreneurial team) can form different social realities (Ashforth et al., 2011). By developing theory on narrative topic heterogeneity in a team, we illustrate that the interaction of different social realities within the same team can have a considerable influence on each co-founder's cognition-based trust in the team.

Moreover, entrepreneurial narratives can draw on popular trends within a given new venture environment to convey legitimacy to potential resource providers, such as investors, but they may also draw on themes unique to a venture in order to convey its distinctiveness (Lounsbury & Glynn, 2001; Navis & Glynn, 2011). The influence of choosing between emphasizing legitimacy and distinctiveness on individual level attitudes has thus far remained underexplored. By theorizing how the uniqueness of narrative topics in a team is related to a founder's cognition-based trust in the team, contingent on the founder's perceived resource scarcity, we address the tension between pursuing legitimacy and distinctiveness through entrepreneurial narratives. In particular, our findings suggest that when a founder perceives resources to be scarce – and so convincing resource providers becomes crucial – the uniqueness of narrative topics is less likely to increase their cognition-based trust in the entrepreneurial team. It might be the case that more popular narrative topics are more strongly associated with legitimacy, which increases the chances for support from external stakeholders (Navis & Glynn, 2011).

Furthermore, our study informs research on the role of environmental factors in shaping attitudes in entrepreneurial ventures. In particular, our study considers how resource scarcity, an important environmental characteristic, influences the formation of individual-level attitudes about the team. We theorize and test the role of perceived resource scarcity as an environmental factor that influences how a founder processes social information about the entrepreneurial team and develops trust in the team (Costa et al., 2018; Salancik & Pfeffer, 1978). Importantly, our findings suggest that, rather than directly shaping a founder's cognition-based trust in their team, perceived resource scarcity may have a more indirect effect through moderating the

influence of entrepreneurial team narratives on the founder's cognition-based trust in the team. Thus, a founder's perception of external resources in the venture environment may influence how they interpret internal resources, such as entrepreneurial team narratives in forming attitudes towards the entrepreneurial team. Existing studies suggest a founder's cognition-based trust has important implications for a variety of venture-level outcomes (De Jong et al., 2016; De Jong & Elfring, 2010; Dirks & Ferrin, 2001). Our findings are consistent with recent arguments that a venture's environment not only has implications for venture-level outcomes, but also for team processes, which can themselves influence venture outcomes (Bromiley & Rau, 2016).

By investigating the structural dimensions of entrepreneurial narratives using a novel text mining approach, we also make a methodological contribution. Content-focused analyses of entrepreneurial narratives tend to be bounded within some specific context, such as entrepreneurial ideation (Gemmell et al., 2012) or psychological disengagement during exit (Rouse, 2016). By contrast, our structural dimensions can be applied to contexts outside of the scope of the current study (e.g., narratives directed at specific audiences). While past studies of entrepreneurial narratives often apply qualitative methodologies, which by their nature involve interpreting the meanings of narrative content (Walsh, 1995), deriving the structural dimensions of narratives may require a more formalized approach. Our application of an automated topic modeling approach enables deriving structural dimensions purely from the narratives (or even other textual data) themselves. Moreover, our work can complement other analyses of latent narratives that focus on content, such as Kibler et al.'s (2021) study of typologies of entrepreneurial failure narratives, as well as methods like computer-aided text analysis, which uses pre-defined dictionaries (Short, Broberg, Cogliser, & Brigham, 2010).

The limitations of our study can be addressed by future research. Although we collect team narratives at an earlier point in time to the dependent variable of team trust, it is possible that relationships between team narratives and team trust may evolve together over time (Blatt, 2009; McAllister, 1995). Future studies can collect data on team narratives and trust at multiple points in time to explore the temporal aspects of the relationships between these variables in more detail. Additionally, while we focus on the relationship between structural dimensions of team narratives and the trust that existing team members feel in their team, it may be interesting to investigate the role of existing team narratives in influencing the trust of new joiners, such as new co-founders or employees, in the team. Finally, our automated topic modeling approach to deriving the structural dimensions of heterogeneity and uniqueness may be applied to narratives directed at more specific audiences. For example, future studies on narratives

communicated to investors may shed further light on the implications of how founders resolve tension between communicating the legitimacy and distinctiveness of their venture (Navis & Glynn, 2011).

From a practical perspective, our findings point to the importance of entrepreneurial team narratives for a founder's cognition-based trust in the team. Co-founders can use entrepreneurial team narratives to process their team's behaviors and perspectives in order to inform their own attitudes and perceptions of the team. More specifically, the structural aspects of topical heterogeneity and uniqueness of team narratives seem to be associated with increasing cognition-based trust. Fostering a team climate in which heterogeneity in members' perspectives of the team is appreciated, may encourage topically heterogeneous team narratives, which can positively influence cognition-based trust. This may be especially relevant for teams in which members perceive environmental resources to be available. For such teams, developing a distinctive and specific team narrative relative to the venture's environment may also support the development of cognition-based trust. Stakeholders that play a mentoring role for early-stage ventures, such as entrepreneurship educators, accelerators, and incubators, could also support their founders by encouraging topically heterogeneous and unique team narratives.

In conclusion, our findings suggest the development of a founder's cognition-based trust in the entrepreneurial team is related to processing social information within the team that is created by team narratives. In particular, two structural dimensions of team narrative resources, heterogeneity and uniqueness of narrative topics in a team, are positively related to a founder's cognition-based trust in the team. However, when the founder perceives increased resource scarcity, both of these relationships are weakened. The results indicate the internal social context not only shapes the development of a founder's cognition-based trust in the entrepreneurial team, but that this is contingent upon the founder's perception of the venture's external environment. Thus, our work provides valuable insights into the influence of post-founding factors within the venture context on a founder's trust in the entrepreneurial team.

4 Essay III: Towards a Dynamic Model of Entrepreneurial Fatigue

While founders might initially feel high levels of energy for their venture, some may develop entrepreneurial fatigue – persistent exhaustion when engaging in venture-related activities. Drawing on longitudinal data from 38 founders, we develop a dynamic model of entrepreneurial fatigue consisting of three phases: eudaimonic, destructive, and diverting. Founders in the eudaimonic phase recharge energy by detaching from the venture. In the destructive phase, entrepreneurial challenges trigger disillusionment and identity conflict, leading to fatigue. Founders in the diverting phase are unable to recover and redirect energy into other endeavors. Our study has implications for research on entrepreneurial well-being, adversity, and exits.

4.1 Introduction

Entrepreneurial activities can positively contribute to a founder's well-being by providing a sense of personal fulfilment and satisfying basic psychological needs, such as autonomy (Nikolaev et al., 2020; Shir et al., 2019). Given that founding a venture can be deeply personal (Wiklund et al., 2019), feeling energy in connection with the venture is a core aspect of a founder feeling psychologically well (Ryan & Frederick, 1997). Yet, founding often involves long working hours and significant uncertainty (Uy, Foo, & Song, 2013). Indeed, founders may suffer from the dark side of entrepreneurship, i.e., the "negative psychological and emotional reactions from engaging in entrepreneurial action" (Shepherd, 2019, p. 217). In particular, some founders may experience persistent and extreme exhaustion when engaging in entrepreneurial activities for their venture, a state we refer to as *entrepreneurial fatigue*. While fatigue generally is not restricted to founders, given the personal connection that founders often form with their ventures (Powell & Baker, 2017; Rouse, 2016), entrepreneurial fatigue may take a special form and could be especially destructive to a founder's well-being (Stephan, 2018).

However, extant literature on the potential negative psychological and emotional reactions from engaging in entrepreneurial action has mostly focused on the outcomes (for an overview, see the meta-analysis by Lerman et al. (2020)), rather than the underlying mechanisms and dynamic development of these reactions. For example, research suggests that entrepreneurial stressors, such as difficulties in securing funding or gaining market traction, are associated with increased physical exhaustion in founders (Kollmann et al., 2019), and that mindfulness exercises and sleep can help founders regain their energy (Murnieks et al., 2019). While such studies take valuable first steps towards shedding light on factors that can deplete

or increase a founder's energy for the venture, much remains to be learned about *how* (i.e., through which underlying mechanisms) entrepreneurial stressors exhaust a founder's energy for the venture, as well as the dynamic development of the founder's energy levels. For instance, when stressors like funding shortages exhaust a founder, the associated lack of energy may itself negatively affect the founder's ability to deal with the stressors and further contribute to fatigue.

Studying the dynamics of entrepreneurial energy and fatigue can advance research in multiple important ways. First, focusing on fatigue can help reconcile the energizing aspects of entrepreneurship that improve a founder's well-being, with its exhausting aspects that are detrimental to well-being (Lerman et al., 2020; Shepherd, 2019; Wiklund et al., 2019). Second, founders unable to sustain energy for their venture may also find it difficult to invest effort into overcoming obstacles, which has implications for our understanding of how founders respond to adversity (Powell & Baker, 2014). Third, as persistently low levels of energy for the venture may signal to the founder the need for leaving the venture, there is potential for advancing theory on founder exits (Rouse, 2016). Due to this importance, we began our study with the primary research question: *How and why does entrepreneurial fatigue develop over time?* Building on our first insights, we also addressed the secondary question: *How can founders refuel their energy for working on their venture and how does a lack of recovery shape a founder's engagement in the venture?*

Given the paucity of existing work on the topic of entrepreneurial energy and fatigue, as well as our interest in understanding how and why entrepreneurial fatigue develops over time, we took an inductive, qualitative approach (Edmondson & McManus, 2007) and collected rich, longitudinal data on 38 founders from 14 early-stage ventures over a 16-month timeframe. We found that while all of the founders in our sample experienced at least some fluctuation in their energy for the venture, only some founders experienced entrepreneurial fatigue. In the most severe cases, founders suffering from entrepreneurial fatigue exited from the venture. Interestingly, in all cases of individuals experiencing entrepreneurial fatigue, one or more of their co-founders did *not* report similarly drastic and extended periods of low energy for the venture, highlighting the significance of individuals' perceptions in the onset of entrepreneurial fatigue. Importantly, our findings suggest recovery from entrepreneurial fatigue is possible; empowering founders (e.g., through co-founders' task and emotional support) can help founders to refuel their energy. We consolidate our findings in a dynamic model of entrepreneurial fatigue and discuss the implications of our work for research on entrepreneurial well-being, adversity, and founder exits.

4.2 Theoretical Background

4.2.1 Fatigue and Energy

The clinical condition of fatigue refers to an individual's subjective experience of mental or physical exhaustion that severely diminishes engagement in occupational and personal activities (Cella & Chalder, 2010; Fukuda et al., 1994; Swartz, 1988). In organizational psychology, scholars study fatigue in the context of work-related stress (Maslach, Schaufeli, & Leiter, 2001; Querstret & Cropley, 2012). Fatigued individuals feel drained of the emotional and physical resources for doing their job (Maslach et al., 2001). Antecedents of fatigue are high job demands, such as time pressure, particularly in combination with low decision latitude (Chong, Kim, Lee, Johnson, & Lin, 2020; Karasek, 1979). Importantly, individuals exposed to similar job demands can differ in their experience of fatigue based on how they perceive these demands (Bakker & Demerouti, 2017). Fatigue can negatively affect job performance (Cropanzano, Rupp, & Byrne, 2003), work engagement (Lanaj, Johnson, & Barnes, 2014), and well-being (Maslach et al., 2001).

Fatigue is a state of very low energy. The concept of energy has received much interest, both in popular practitioner-oriented literature as well as academic research (Baker, 2019; Cole, Bruch, & Vogel, 2012). Quinn, Spreitzer, and Lam (2012, p. 341) break down the concept of energy into *physical energy* ("the capacity to do work") and *energetic activation* ("the subjective component of a bio-behavioral system of activation experienced as vitality, vigor, enthusiasm, zest"). Even if an individual has a high level of physical energy, the individual is less likely to invest significant effort into activities for which the individual feels little energetic activation. In extreme cases in the work context, an individual may experience not only an extremely low level of energetic activation but also the inability to increase energetic activation, which is commonly referred to as burnout (Maslach et al., 2001). Therefore, while physical energy may be an important component of energy, energetic activation is necessary to convert it into actions that benefit the organization. Finally, energetic activation in an organization is a social phenomenon, given the potential for energizing/de-energizing interactions between individual members (Cole et al., 2012). For example, when two co-workers have a conversation, one individual's enthusiasm can fuel the other's energetic activation. In studying the development of energy in individuals, it is thus crucial to consider the social context of these individuals.

In sum, fatigue and energy are important constructs in organizational psychology. However, there is a limited understanding of how fatigue and energy develop in individuals who have a high degree of control over their job, which is a key characteristic of an

entrepreneurial setting (Stephan, 2018); this provides part of the motivation for the current study.

4.2.2 Entrepreneurial Well-being

Researchers increasingly recognize the value of investigating entrepreneurial well-being, "the experience of satisfaction, positive affect, infrequent negative affect, and psychological functioning in relation to developing, starting, growing, and running an entrepreneurial venture" (Wiklund et al., 2019, p. 579). There are two dominant psychological approaches to studying well-being: *hedonic* and *eudaimonic*. The hedonic approach is concerned with life satisfaction and contentment, while the eudaimonic approach emphasizes meaning and self-realization stemming from engagement in self-determined and purposeful activities (Ryan & Deci, 2001; Ryff, 2019) – an apt description of entrepreneurial endeavors (Stephan, 2018). Much of extant entrepreneurship literature has adopted the hedonic approach to studying entrepreneurial well-being, finding that founders report higher life and job satisfaction than employees on average (Benz & Frey, 2008; Stephan, 2018). Both types of well-being positively predict entrepreneurial outcomes (Stephan, 2018), such as persistence (Patel & Thatcher, 2014) and performance (Gorgievski, Moriano, & Bakker, 2014); however, eudaimonic well-being, rather than hedonic well-being, predicts a founder's proactive behavior (Hahn, Frese, Binnewies, & Schmitt, 2012). In general, much of the work on entrepreneurial well-being has highlighted the positive, energizing aspects of founding a venture because entrepreneurial work allows founders to fulfill basic psychological needs for autonomy, competence, and relatedness (Nikolaev et al., 2020; Shir et al., 2019). Increased entrepreneurial well-being can positively influence entrepreneurial outcomes, such as persistence (Patel & Thatcher, 2014) and performance (Gorgievski et al., 2014).

However, this positive view of engaging in entrepreneurship is not without critique. For example, recent work suggests that a founder's passion may fade over time (Collewaert, Anseel, Crommelinck, Beuckelaer, & Vermeire, 2016) and that obsessive passion is particularly harmful for a founder's well-being (Stroe, Wincent, & Parida, 2018). Furthermore, Stephan (2018) cautions that the higher life and job satisfaction reported by founders could be due to self-justification processes triggered by the autonomous nature of entrepreneurial work; since founders typically have a great deal of autonomy over their work, they may be inclined to justify the efforts invested into their venture with overly positive attitudes.

Therefore, it is important for the entrepreneurial well-being literature to consider the dark side of founding a venture. Indeed, there have been recent calls to study the underexplored negative psychological and emotional reactions of founders to engaging in entrepreneurship

(Shepherd, 2019; Wiklund et al., 2019). For example, stressors, such as encountering financial difficulties in developing the venture, can negatively affect a founder's well-being (Kollmann et al., 2019). As well as confronting the founder with potential material losses (Hetschko, 2016), stressors can threaten the founder's identity (Powell & Baker, 2014; Stephan, 2018). Distress caused by entrepreneurial stressors may actually increase the effort that founders invest into their ventures (Stephan, 2018). Persistent efforts can generate mental and physical strain that diminishes well-being (Patel, Wolfe, & Williams, 2019), potentially creating a downward spiral of further dissatisfaction and reduced well-being (Örtqvist & Wincent, 2010). Understanding such wearying aspects of entrepreneurship is important since, in addition to potentially hurting a venture's performance, they cause much suffering for founders (Stephan, 2018).

In studies that have investigated the negative psychological and emotional reactions of founders to engaging in entrepreneurship, much of the focus has been on the outcomes rather than the underlying mechanisms. For example, Kollmann et al. (2019) show entrepreneurial stressors are correlated with physical exhaustion in founders, yet *how* such stressors might physically exhaust founders remains underexplored; some stressors might exhaust founders in different ways than others. Much also remains to be learned about how founders recover from exhaustion. For instance, Murnieks et al. (2019) find that mindfulness exercises and sleep can help founders fight off their perceived exhaustion, and that these recovery techniques substitute rather than complement each other in mitigating exhaustion. While this is a valuable finding, much can be gained by exploring perceived exhaustion in more depth. For example, feedback loops between perceived exhaustion and its antecedents could create vicious cycles that are difficult to break with mindfulness or sleep alone. Finally, many entrepreneurial activities (e.g., product development, securing funding) are iterative, so understanding the dynamics linking these activities and fatigue may be especially relevant.

4.2.3 Research Question

To study fatigue and energy in the context of entrepreneurial well-being, we refer to the term *entrepreneurial fatigue* as *a founder experiencing persistent and extreme exhaustion while engaging in entrepreneurial activities for the venture*. Consistent with this definition of entrepreneurial fatigue, we refer to a founder's *entrepreneurial energy* as *the level of activation that the founder feels for investing effort into the venture*. In studying a founder's energy for the venture, we focus on energetic activation, which is subject to a founder's own perception (Quinn et al., 2012). While extant work indicates that entrepreneurial energy likely changes over time (Quinn et al., 2012; Stephan, 2018), it is unclear how these fluctuations may be reconciled into a dynamic theory of entrepreneurial fatigue and energy. Thus, our primary

research question is: *How and why does entrepreneurial fatigue develop over time?* Our secondary research question is: *How can founders refuel their energy for working on their venture and how does a lack of recovery shape a founder's engagement in the venture?*

4.3 Method

Since entrepreneurial energy and fatigue are nascent topics in extant literature, we apply a qualitative methodology (Edmondson & McManus, 2007). Our open-ended, inductive approach aims to disentangle the dynamics and underlying mechanisms through which founders develop entrepreneurial fatigue over time, with a particular focus on causal links and potential temporal feedback loops that explain transitions between energy states.

4.3.1 Sample Selection and Data Collection

We sampled ventures that had two or more co-founders, were less than six years old and in the early stages of development (Amason et al., 2006). We chose these sampling criteria because early-stage ventures typically have few resources, face high uncertainty, and their survival is highly dependent on the founders. Thus, it is especially important for founders to manage their energy in early-stage ventures. Moreover, sampling ventures founded by teams allowed us to study how different co-founders manage their energy within the same venture context, thereby minimizing the impact of venture-level factors on our findings. We identified co-founders to include in the study by following the definition of new venture teams proposed by Klotz et al. (2014, p. 227), i.e., "the group of individuals that is chiefly responsible for the strategic decision making and ongoing operations of a new venture." Using these sampling criteria, we identified potential study participants through filtered searches on online databases of new ventures within a large European metropolitan area. We also attended various local entrepreneurship events (e.g., startup fairs, pitch nights) to meet founders and personally speak to them about our study. Such personal contact with founders was important, not only because our study demanded significant time investment, but also because talking about one's personal ups and downs along the entrepreneurial journey is a sensitive issue. We expected that early personal contact would enhance the willingness of founders to participate in our study and provide honest insights into their experiences.

Through these recruitment activities, we were able to make contact with founders from 285 ventures. While the founders of 145 ventures were unable to participate due to time constraints, we conducted a first round of semi-structured interviews with the founders from the remaining 140 ventures. For 77 ventures, we were able to interview the complete entrepreneurial team. Although our unit of analysis is the individual founder, it was essential for our study to also collect data from complete entrepreneurial teams. Capturing the entire

team allowed us to gain a richer understanding of each founder's venture context and address the 'why' part of our research question, as well as validate a focal founder's answers. Collecting data from founders who did *not* develop entrepreneurial fatigue also helped us to understand why some founders developed entrepreneurial fatigue while their co-founders did not. After an average of 6 months, we contacted the 77 ventures from our first interview round to schedule a further round of interviews. We ultimately conducted a second semi-structured interview with all the founders of 44 of these ventures[8].

Altogether, we twice interviewed 112 founders from 44 ventures covering a variety of industries, team sizes, and individual backgrounds. Before conducting any interviews, we guaranteed data confidentiality. Additionally, in order to encourage founders to speak as openly and honestly as possible, each founder was interviewed individually, rather than in a team setting. We created an interview guide for each interview round (see Appendix 7.3.1), which we iteratively updated during early phases of the data collection in order to obtain richer insights from the founders. For instance, we simplified the phrasing of questions, changed the order of some questions, or added refined questions to obtain deeper insights into emergent themes. In each interview, we asked a series of open-ended questions designed to elicit stories from the founders on key events and transitions between different energy states. When founders gave vague or abstract answers, we probed for specific examples. For instance, when founders told us about how they would periodically detach from working on the venture in order to recharge their energy, we asked for concrete examples. Interestingly, we sometimes found that although founders said they detached from work fairly regularly, they could not offer specific examples of having done so recently, potentially indicating that these founders may in practice have detached less than they thought. Thus, we gained a richer understanding of the different ways in which founders periodically detached to recharge their energy for working on the venture. Overall, our interview approach let us develop a detailed understanding of how nascent concepts, such as a founder's energy for working on the venture, developed over time.

For our analysis, we focused on ventures in which all the founders provided rich enough information for theorizing about the development of entrepreneurial energy and fatigue over time. Consistent with Eisenhardt (1989), we took a theoretical sampling approach to narrow down our sample to 38 founders from 14 ventures, whilst retaining maximum variation across

[8] In 2 out of the 44 ventures, 1 or 2 of the founders had exited the venture and we were unable to conduct a second interview with these founders despite multiple attempts to contact them.

the founders in terms of their entrepreneurial energy. Specifically, our final sample included both founders who experienced multiple fluctuations in energy, as well as founders with rather stable energy levels. This helped us develop theory on balancing and reinforcing loops in the development of entrepreneurial fatigue. Moreover, upon checking our final model with the founders excluded from our reduced sample, we found no indication of deviations. Table 10 provides an overview of the 38 founders and 14 ventures included in the final sample. We use fictitious names to preserve the anonymity promised to our participants.

Table 10. Background information on founders and their ventures

Venture	Founder	Age	Gender	Educational Background	Entrepreneurial Fatigue	Founder Exit	Founded	Industry
Alpha	Adam	29	Male	Computer science	X	2018	2017	IT
	Alice	29	Female	Business				
	Allen	28	Male	Law				
	Amy	26	Female	Psychology				
	Andrew	27	Male	Psychology	X	2019		
	Anna	25	Female	Business		2019		
Beta	Ben	46	Male	Medicine			2015	Biotech
	Brian	56	Male	Natural sciences				
Chi	Carl	38	Male	Engineering			2015	IT
	Chris	39	Male	Computer science				
	Connor	62	Male	Business				
Delta	Dan	26	Male	Engineering			2018	IT
	David	33	Male	Engineering				
	Dean	28	Male	Business				
Epsilon	Ed	33	Male	Natural sciences			2017	Biotech
	Elias	33	Male	Business				
	Emma	30	Female	Natural sciences				
Gamma	Gina	38	Female	Business			2017	IT
	Greg	50	Male	Business				
Iota	Ian	41	Male	Business			2017	IT
	Irvin	39	Male	Computer science				
	Isaac	31	Male	Natural sciences				
Lambda	Lily	41	Female	Engineering	X		2015	Consumer goods
	Luke	52	Male	Natural sciences				
Mu	Matt	29	Male	Engineering	X		2019	Energy
	Mike	39	Male	Business				
Nu	Nick	37	Male	Computer science	X		2016	IT
	Noah	41	Male	Natural sciences				
Omega	Olaf	33	Male	Computer science			2018	IT
	Oliver	33	Male	Engineering				
	Oscar	32	Male	Business	X	2019		
	Owen	32	Male	Engineering	X			
Pi	Pam	43	Female	Natural sciences			2018	Biotech
	Phil	41	Male	Natural sciences				
Rho	Rob	45	Male	Natural sciences			2018	Services
	Ryan	46	Male	Business				
Sigma	Sam	39	Male	Computer science	X		2015	IT
	Stanley	37	Male	Business				

In our final sample, eight founders from six ventures experienced entrepreneurial fatigue over the course of our data collection. Interestingly, at least one founder in each of these

ventures did *not* experience entrepreneurial fatigue. As themes on entrepreneurial fatigue began to emerge during our data analysis, we felt it valuable to conduct a third interview with the eight founders who experienced entrepreneurial fatigue. For this third round, we developed a shorter, more focused interview guide. Of the eight founders we contacted for the third interview, two founders had left the venture and we were unable to reach them, one founder (who appeared to have the most extreme case of entrepreneurial fatigue) was unresponsive, and one founder (who had started a new venture with a different set of co-founders) was also unresponsive. We conducted interviews with the remaining four founders, which greatly enriched our theorizing on the development of entrepreneurial fatigue. Specifically, two founders seemed to have recovered from entrepreneurial fatigue, one founder seemed to have partially recovered, and one founder seemed to experience even more extreme entrepreneurial fatigue. Altogether, our theorizing draws on 78 interviews from 38 founders, between November 2018 and February 2020. After we finished the interviews (4,288 minutes in total), we transcribed them, yielding 1,186 pages of single-spaced text.

To supplement the interviews and allow for data triangulation (Jick, 1979), we collected observational notes from our on-site visits, as well as secondary data on the ventures and their founders (e.g., via newspaper articles and LinkedIn profiles). The supplementary data amounted to 172 pages of single-spaced text. This data was particularly helpful in gaining a richer understanding of when and how key events progressed over the course of our study period, which was vital in developing detailed timelines for each of the founders. In creating the timelines, we tracked events at the team and venture levels as well as events external to the team and the venture. The timelines also captured the founder's entrepreneurial energy at each point in time based on his or her interview statements. Specifically, the timelines mapped changes in energy states, such as the onset of entrepreneurial fatigue, to events taking place within each founder's environment, as well as the founder's reactions to these events. Appendix 7.3.2 shows an excerpt from one such timeline. We used circles to denote events that the founder described as especially unexpected, such as the retraction of a previously secured funding offer. While we also drew on our interview data for developing the timelines, our supplementary data sources were especially helpful in filling in the gaps left by the interview data. For example, where we were unable to conduct a third interview with some founders, we checked their LinkedIn profiles to see if they were still at the venture. Overall, the data provided us with the rich insights needed for disentangling how and why entrepreneurial fatigue develops over time.

4.3.2 Data Analysis

As is typical with inductive research, we iterated between collecting and analyzing data. While we describe our data analysis in the following text as a series of steps for ease of explication, these steps were not linear in practice; we iterated frequently between the different data analysis steps in accordance with the changes in our theory building. In the first step, we immersed ourselves into each founder's account, staying close to the founder's own words to derive first-order concepts. For instance, Mike from Mu (Interview 1) said, "I believe in the business idea and I am very happy to be here. […] The current team is 100% trustworthy". Based on such statements, we created the first-order concept "Strong belief in venture (including team)". In this way, we accumulated our initial codes, before grouping together those that seemed to converge on the same concept. Our first-order concepts also changed as our emergent theoretical model evolved. For example, as we increasingly recognized the importance of balancing and reinforcing loops in explaining how founders recovered or failed to recover from entrepreneurial fatigue, we returned to our data to code relevant first-order concepts (e.g., "Task-related support from co-founder(s)" and "Repeatedly falling behind plans/goals"). Through approximately five rounds of such iterations, we arrived at our final list of 42 first-order concepts.

In the next step, we created multiple clusters of these first-order concepts to help us abstract them into the second-order themes. For example, we combined the first-order concepts "Strong belief in venture (incl. team)", "Feeling active, engaged, and productive in relation to working on the venture", and "Determined to overcome challenges" into the second-order theme "Entrepreneurial energy reservoir full". We use the term *entrepreneurial energy reservoir* to refer to the total store of entrepreneurial energy that a founder has at any given point in time. In deriving second-order themes, we especially paid attention to nuanced differences between first-order concepts. For instance, while first-order concepts such as "Difficulty in giving full effort/potential" and "Feeling completely unproductive" both indicated some decline in entrepreneurial energy, the former suggested a smaller drop than the latter. We therefore created two clusters of first-order concepts: one for the second-order theme "Entrepreneurial energy reservoir low" and another for "Entrepreneurial energy reservoir empty = entrepreneurial fatigue". The distinction became crucial for understanding the dynamics involved in transitioning between the three levels of the entrepreneurial energy reservoir. This led us to return to our first-order concepts and recode our data to reflect differences between low and empty entrepreneurial energy reservoirs. Through many such iterations, our final clustering of first-order concepts yielded twelve second-order themes.

We could then further abstract and group second-order themes into aggregate dimensions. In particular, we grouped together the states of the entrepreneurial energy reservoir – full, low, and empty (i.e., entrepreneurial fatigue) – into the aggregate dimension of *Entrepreneurial Energy*. The rest of the second-order themes generally covered the dynamics underlying a founder's movements between energy states. We therefore grouped the remaining second-order themes into aggregate dimensions based on which energy state they tended to culminate in. For example, "Becoming disillusioned with the venture", "Experiencing identity conflicts", and "Negatively spiraling belief in venture" were second-order themes underlying a founder's development of entrepreneurial fatigue, i.e., an empty entrepreneurial energy reservoir. Therefore, we grouped these second-order themes into the aggregate dimension *Destructive Phase*. In this way, we derived 4 aggregate dimensions: *Entrepreneurial Energy, Eudaimonic Phase, Destructive Phase,* and *Diverting Phase*.

Using the emergent set of first-order codes, second-order themes, and aggregate dimensions, the first author and a second coder (who was unaware of the aims of the current study) coded the data for all founders. Once the first author and second coder had independently conducted an initial coding of the data, they compared each other's assessments to discuss and resolve potential discrepancies. For example, early on in the coding process there were differences in how the coders assigned the second-order themes "Becoming disillusioned with venture" and "Experiencing identity conflicts." Through the ensuing debate and by revisiting extant literature, the first author and second coder arrived at the consensus that, whereas becoming disillusioned with the venture tended to involve disappointments outside of the self, identity conflicts tended to be within the self. Based on this understanding, the first author and second coder recoded the relevant parts of the data. For instance, Andrew from Alpha (Interview 2) said, "I think that my [energy] has also here and there dwindled, because I realize that actually this [venture] is something that someone else has built up and isn't my own somehow." While we had initially coded this statement with the second-order theme "Becoming disillusioned with venture", we recoded it as "Experiencing identity conflicts". This coding process culminated in the data structure shown in Figure 6.

Figure 6. Data structure

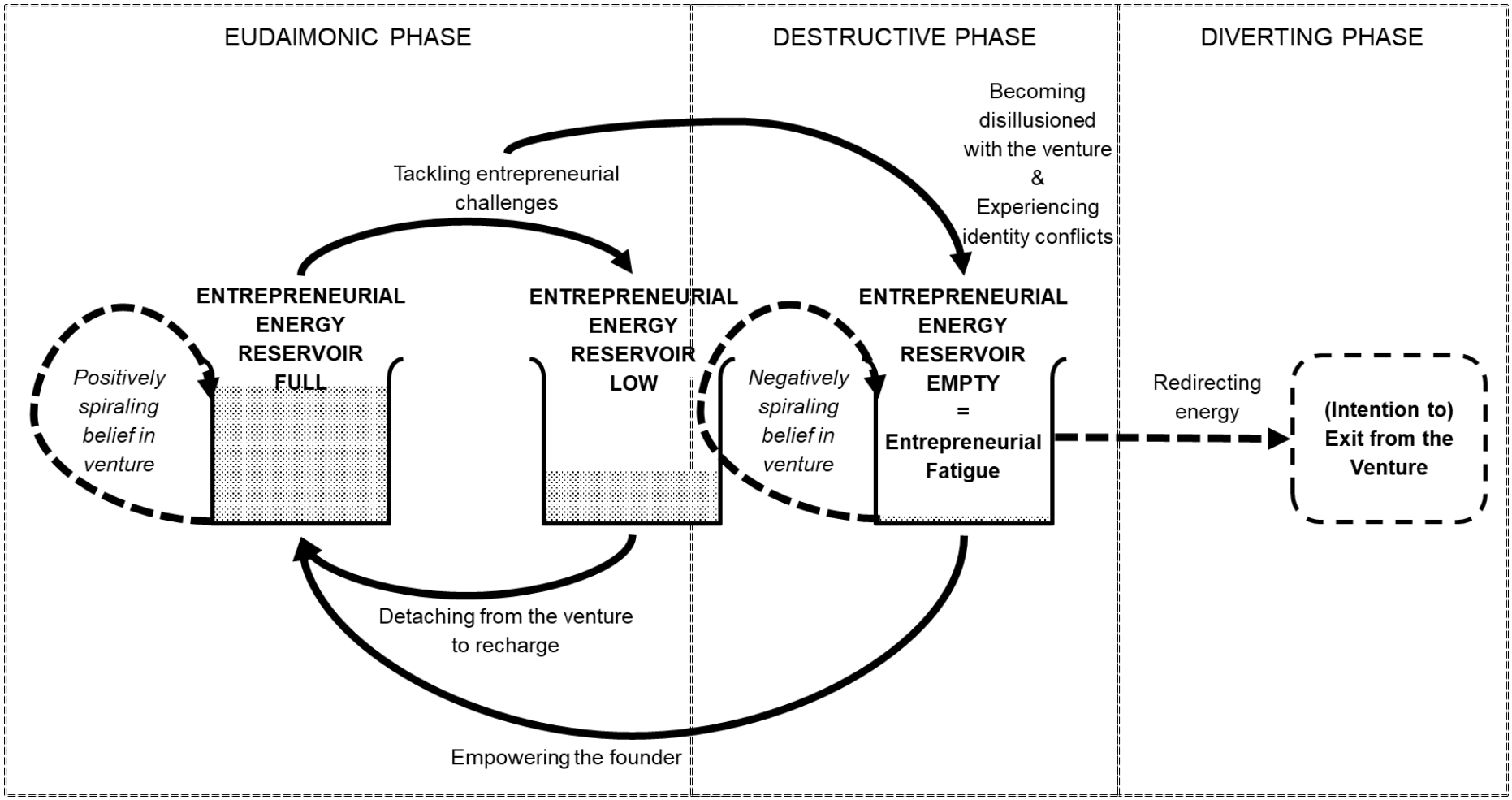
Drawing on our emergent coding of the data, we iteratively developed a model of entrepreneurial fatigue. We circled between each version of the model, our data, and extant literature to refine and update our theory building. For example, in earlier versions of our model, we theorized that becoming disillusioned with the venture and experiencing identity conflicts

were the dynamics underlying movement between a full entrepreneurial energy reservoir to an empty one. Yet upon revisiting our data, we found that this did not satisfactorily explain what precipitated the development of disillusionment and identity conflicts themselves. Closer examination of the timelines of the founders who developed entrepreneurial fatigue suggested that in all cases disillusionment with the venture and identity conflicts proceeded from the context of tackling entrepreneurial challenges. We therefore revised our model to show that, while tackling entrepreneurial challenges might not directly set off entrepreneurial fatigue, it may indirectly do so by triggering disillusionment with the venture or identity conflicts. In this way, we continued iterating our model until this process could no longer produce additional insights. In the following section, we describe each element of our final model step-by-step, before concluding with the final, complete representation of the model.

4.4 Findings

As shown in Figure 7, by synthesizing our findings, we build a dynamic model of entrepreneurial fatigue consisting of three phases: eudaimonic, destructive, and diverting. We first provide an overview of these phases before elaborating on the findings that emerged from the data. In the eudaimonic phase, founders balance energy consumed in tackling entrepreneurial challenges with energy recharged through periodically detaching from the venture, such that the entrepreneurial energy reservoir remains above or at the low level. We label this the eudaimonic phase given its strong connections with the eudaimonic perspective on understanding well-being, which emphasizes meaning and self-realization in the pursuit of self-determined, effortful activities (Ryan & Deci, 2001). In the eudaimonic phase, founders control fluctuations in their entrepreneurial energy and may even be able to grow their energy reservoir through a positively spiraling belief in their venture. However, when tackling entrepreneurial challenges, some founders may struggle with fundamental issues, such as becoming disillusioned or experiencing identity conflict, which can cause the founder to develop entrepreneurial fatigue and transition to the destructive phase. Here, founders suffer a sustained and severe drop in their entrepreneurial energy and may experience a negatively spiraling belief in their venture over time. Founders may be able to leave the destructive phase by recovering their energy for the venture through feeling empowered, which involves founders once again finding meaning and self-realization in working on their venture, thus enabling a return to the eudaimonic phase. Alternatively, founders may move into the diverting phase by redirecting entrepreneurial energy (e.g., by developing a new business idea) and ultimately leaving the venture.

Figure 7. Dynamic model of entrepreneurial fatigue



In the following sections we discuss each of the elements of our theoretical model in detail. First, we illustrate how the founders in our sample experienced entrepreneurial fatigue and explain its nature, differentiating it from related constructs. Second, we show how entrepreneurial fatigue can develop from founders tackling entrepreneurial challenges and becoming disillusioned or experiencing identity conflicts. Third, we outline two possible ways in which founders may recover from entrepreneurial fatigue, namely by becoming empowered or by exiting the venture, as well as how some founders may fail to recover from entrepreneurial fatigue. Finally, we explain how founders may manage their entrepreneurial energy to avoid developing entrepreneurial fatigue.

4.4.1 Entrepreneurial Fatigue

Given our interest in studying the development of entrepreneurial fatigue, a first step was to identify founders in our sample who experienced a persistent and extreme exhaustion while engaging in entrepreneurial activities for their venture. Out of the 38 founders we interviewed, eight experienced fatigue during the course of our study: Adam and Andrew from Alpha, Lily from Lambda, Matt from Mu, Nick from Nu, Oscar and Owen from Omega, and Sam from Sigma. In Matt's case, entrepreneurial fatigue seemed to appear around Interview 1, a time when the venture was struggling with securing funding and two of the co-founders had just decided to quit: "When such a demoralizing speech is made [by a now ex-co-founder], then I have to say, 'I am done for today. I don't want to see you anymore, and I can't work right now." At the same time, Matt had to "[keep] up the team's motivation, which is very difficult […] in times like these where everybody knows, OK, in a month and a half we will be stuck at zero financially". This state persisted, with Matt remarking four months later that it was still "an extremely difficult time, that really put a lot of pressure on me, and I was in the office and thinking to myself: what the hell am I doing here? I could also have taken the day off and been just as productive" (Interview 2). Table 11 provides evidence for all eight founders experiencing entrepreneurial fatigue.

Table 11. Exemplary quotes from all founders who experienced entrepreneurial fatigue

Founder (Venture)	Quotes and Field Notes from Interviews or Triangulation Material (T)
Adam (Alpha)	Interview 1: I was constantly working […] so it was pretty tough and I was really drained as well. And that is when I found out that even the important things have to wait, because if you drain yourself too much, [you] cannot do [any] of them. Field note (T): Adam left Alpha after Interview 1 to focus on his doctoral studies, which he had pursued while working on Alpha.
Andrew (Alpha)	Interview 1: A lot of things came together and then I had this moment where I didn't believe in Alpha anymore. [Two ex-co-founders], they were also a bit demotivated and had the feeling that Allen sometimes makes promises […] but somehow nothing really happens.

	Interview 2: My motivation has significantly gone down […] and my commitment is sometimes dangerously low. I am a little worried myself, because I think you can't build a startup in a meaningful way if all the people are not really giving their full energy to it. Field note (T): Andrew started a new venture three months after Interview 2 and, after four more months, left Alpha entirely to focus on the new venture.
Lily (Lambda)	Interview 1: There is so much tension and it feels somehow impossible. Somehow this feeling escalates and either one of us [co-founders] stands up and gets loud. Or I am so sad on the inside that the tears almost come and in that moment the energy is just gone and there is a kind of silence and we need to start again. It was a pattern – brutally awful. Interview 2: I am someone who puts a lot of heart and love into what I do […] but the industry is really a quick and dirty business, yeah? I really put my heart and soul into it and if I was lucky I would get an answer from [one or the other of the agencies]. That was extremely demotivating. Interview 3: My overall energy [for Lambda] has sunken because I am just not really efficient at regulating it.
Matt (Mu)	Interview 1: Often issues were not addressed [in the venture] that really bothered us and then at some point [the tension] just burst. And no one knew why, of course, and by the time [I] got to the bottom of the matter, a lot of time and energy was lost. Field note (Interview 1): Matt seems very stressed out and exhausted, sometimes having trouble remembering the interview question asked. Interview 2: It has already been the case over the past year that we had an unexpressed problem and that we burned up so much energy internally […] that it doesn't help [the venture].
Nick (Nu)	Interview 1: Unexpected things are happening all the time. We are used to that and you just have to react to it; you don't have time to think about it […] but over time, it really drags you down. Interview 2: Just thinking again about how time has been wasted on such unnecessary things, […] week after week, you have worked a lot but you have little to show for it; then you ask yourself why, and it becomes clear that external factors have forced us to fight against the wind. Interview 3: I see that, regardless of how much energy I invest, there are blockers.
Oscar (Omega)	Interview 1: We felt like we were being slowed down a lot, because we had to explain again and again why we had to do it this way […]. That really got on our nerves and also brought Owen down. Field note (T): Oscar left Omega four months after Interview 1 (i.e., two months before Interview 2). Interview 2: Owen wanted me to be a second Owen and did not believe me when I made suggestions or wanted to do certain things. And that basically motivated me less and less to participate in my tasks. We discussed a lot and it became clear in that we had to discuss every little thing, every little decision. […] At the beginning we were rather objective […] but that only lasts up to a certain point and then you get emotional anyway.
Owen (Omega)	Interview 2: Goals were not being achieved. At some point you have to […] say that OK, the trust is also starting to get a bit lost. […] I have often had to think about whether [working on this venture] is the right thing to do – whether I can even afford to keep working on it. Interview 3: My energy was at a really low point after the financing round fell through. […] Then came a lot of self-doubt and that was demotivating and drained energy.
Sam (Sigma)	Interview 1: Reflecting on yourself, whether your own actions were right is something I manage quite well. However, in stressful situations, where one has already worked through all the weekends, it is no longer humanly feasible. […] I've had the experience of programming for three years, 14 hours in front of a computer monitor, and that makes me tired [of working on the venture]. Interview 2: I think that everyone enjoys their work in principle, but […] I am running at maximum capacity. […] In two or three months the discussions will start over again: why isn't [the product] ready yet and here is a new feature by the way that also has to be completed.

Field note (Interview 2): Sam looks and sounds tired; he is pessimistic about the venture and his role in it

Importantly, entrepreneurial fatigue in our data appeared to be different from concepts such as temporary exhaustion, depression, and burnout. Unlike temporary exhaustion, entrepreneurial fatigue built up over a longer period of time and could involve the founder feeling permanently exhausted, demoralized, and pessimistic in connection with the venture. Entrepreneurial fatigue also differed from depression, which entails a distinct change in mood, typically involving sadness, irritability, and hopelessness that affects multiple domains of an individual's life (Belmaker & Agam, 2008; Brenninkmeyer, van Yperen, & Buunk, 2001). In contrast to the general feelings of defeat experienced by depressed individuals, founders in our sample affected by entrepreneurial fatigue still described their enjoyment of activities outside of the venture. For example, Matt from Mu (Interview 1) said, "I do sports every day, whether it's going for a bit of jogging or going to the gym. […] Even if you have had a horrible day, you do sports and then you feel better."[9] Entrepreneurial fatigue was also distinct from burnout, a specific stress syndrome commonly understood as a process of emotional exhaustion, depersonalization, and diminished personal accomplishment (Maslach et al., 2001). In contrast to burnout, which captures a clinical diagnosis (Schaufeli, Bakker, Hoogduin, Schaap, & Kladler, 2001) and has substantial implications on an individual's private life and their health (Ahola, Hakanen, Perhoniemi, & Mutanen, 2014), entrepreneurial fatigue in our sample appeared to be restricted to the context of the current venture and its challenges.

4.4.2 Developing Entrepreneurial Fatigue

When we started exploring why founders in our sample developed entrepreneurial fatigue, we found that all of them had co-founders working in the same venture and thus under comparable conditions that did not show similarly drastic and extended periods of lacking energy for the venture. Thus, entrepreneurial fatigue seemed to be mainly an individual-level phenomenon. For example, Sam's co-founder, Stanley (Interview 2) said, "our biggest challenge is transferring our customers from pilot projects to rollouts […] We also had [an employee] working on this […] but that didn't work and we had to let them go." Similarly, Sam (Interview 2) said, "Making the transfer from the pure conclusion of a contract to actual use [on

[9] Note, however, that engaging in non-work activities does not equate psychologically detaching from the venture. Indeed, Matt added, "for me, detaching doesn't have to do with being physically away from the workplace, but for me […] it is when I am somewhere else mentally. I haven't managed that at all in the last months. I go with [thoughts of the venture] to bed and I wake up with them".

the customer-side] is still very difficult for us." These two similar quotes illustrate that both co-founders perceived the same challenge for the venture. However, only Sam seemed to be experiencing entrepreneurial fatigue, with him adding, "Since [the employee] left […] the topics are becoming more numerous again, there are already […] deadlines being communicated, which I personally consider impossible." Thus, Sam's perception of the challenge of converting pilot projects into rollouts, particularly the failure of Sigma's previous attempt to address this issue, seemed to exacerbate his pessimism about the future of the venture. By contrast, Stanley was more optimistic: "certainly these have been some low points, but we have learned what is necessary or how we can adapt" (Interview 2). Taken together, these quotes illustrate how co-founders may be aware of the same entrepreneurial challenge, yet differ in their individual-level perception of it and its impact on their entrepreneurial energy. Thus, our data suggest individual-level, interpretive triggers may be particularly important in explaining the onset of entrepreneurial fatigue.

Specifically, when we looked for such triggers in our data, we found that the founders' perceptions of a specific set of current and past entrepreneurial challenges played an important role in the development of entrepreneurial fatigue. Tackling entrepreneurial challenges means working on tasks for the venture that test the founder's abilities and tax their personal resources. Examples from our data include creating product-market fit, raising funding from investors, advancing product development, and managing existing resources (e.g., the team). For instance, Nick from Nu said, "The most difficult thing has been closing this financing round and trying to survive from week to week and keep the venture alive […]. Naturally, that takes its toll on [my energy] and so on. It is not easy" (Interview 2). Moreover, while challenges evolve or differ over time, tackling entrepreneurial challenges is a repeated activity, which we observed at multiple points in time for each of the founders in our sample. Indeed, half a year later, Nick spoke in Interview 3 about how the venture was again struggling with financing, saying, "regardless of the issue of whether investors would give an investment, without us showing traction it would make no sense" and that his "energy capacity is definitely shrinking". For some founders, tackling entrepreneurial challenges triggered an almost complete depletion of their entrepreneurial energy reservoir for an extended time. In this emptied state of the entrepreneurial energy reservoir, founders experienced entrepreneurial fatigue. Our data suggests that entrepreneurial fatigue did not directly develop from tackling entrepreneurial challenges, but emerged in two ways: the founder becoming disillusioned with the venture and the founder experiencing identity conflict.

First, disillusionment refers to the experience of realizing one's prior beliefs or expectations to be illusory or overly optimistic (Heath & Jourden, 1997; Janoff-Bulman, 1989). In our study, founders became disillusioned about their prior beliefs regarding their role in the venture and/or the feasibility of the current entrepreneurial opportunity. For instance, in describing the challenge of convincing investors in raising a financing round for his venture, Oscar from Omega said:

> Our investor meetings very quickly became about investors dismantling our business model and everything and then Owen would just nod saying yes, […] we still need to work on this and we have to do better there […] and yes, that's right, we can talk again in a couple of months. We are still not far enough. (Interview 2)

Rather than agreeing with the investors' objections, Oscar believed, "Investors are always very critical […] and you have to show them a certain amount of strength – with investors, you have to hit the table and say, 'but I am firmly convinced that this works and if you are not convinced, then you won't get the investment'". Oscar became disillusioned with investor meetings over time as he repeatedly felt that his co-founder, Owen, was unable to challenge the investors and convince them of the venture's current value. Oscar tried to raise his concerns with Owen, however, this led to conflicts. Oscar stated, "In the beginning I told [Owen] more directly that he should sell our offering more strongly [to the investors], but then conflicts arose […]. Owen did not believe me when I made suggestions […]. And that basically motivated me less and less to participate in my tasks" (Interview 2). Oscar's disillusionment with investor meetings and his own co-founder's lack of willingness and ability to improve the situation, drained his energy for working on the venture. As these and other quotes in Table 12 suggest, disillusionment makes it difficult for founders to tackle entrepreneurial challenges and can significantly drain their energy.

Table 12. Representative quotes for how disillusionment and identity conflicts can lead to entrepreneurial fatigue

Second-order theme	Representative Quotes
Becoming disillusioned with the venture	Matt from Mu (Interview 1): [My former co-founder] returned from vacation and we wanted to update him […] and then out of the blue he makes accusations and […] says completely absurd things. […] You have made external statements about how we are building the pilot until this and this date and now you have to find a replacement for the team on top of all the work. And the hardest thing was the demoralizing nature of [the ex-co-founder's] message.
	Oscar from Omega (Interview 2): This is not my approach to entrepreneurship. We have rarely acted entrepreneurially. We have strongly imitated or copied. […] Often […] there was a terrible atmosphere [in the team] and then Owen pulled the energy down even more, because he kept picking on everything we had done wrong.
	Sam from Sigma (Interview 2): My subjective perception was that I trust my co-founder […] but now I don't think the perception is the same from his side. Out of some

	impulse, [he] keeps grabbing the steering wheel, which leads to the fact that I – apart from dealing with my existing workload – also have to build up a certain barrier, so that I can do my job.
Experiencing identity conflicts	Andrew from Alpha (Interview 2): I think that my [energy] has also […] dwindled, because I realize that this [venture] is actually something that someone else has built up and is not really me somehow. Lily from Lambda (Interview 3): Energy, in my eyes, is consumed when it drains into energy voids. […] Last summer I was not sure if […] I could still identify with [the venture]. […] We have these special promotional items […] and it gives us pleasure to create these beautiful products […] but still at some point I felt empty [of energy]. Sam from Sigma (Interview 2): My role is that of product development [i.e., CTO]. […] I think there is a fundamental divergence [in role expectations] that drains [my energy for the venture]. […] I don't think this would realistically happen in this venture anymore, but I would like to […] only have to deal with my own role, so that of the CTO. That means I would no longer have to program myself, but would approach things more strategically […]. If that were possible, I would [have the energy] to continue the journey [with this venture]. Field note (Interview 2): Even though Sam has been the CTO from the start, he seems to perceive a conflict between how he personally envisions this role and how he feels his role is actually enacted within the venture. Sam appears pessimistic about resolving this identity conflict.

Second, we found that founders who experienced entrepreneurial fatigue tended to also experience identity conflict, which refers to the tension or dissonance between the different identities that an individual holds (Stryker & Burke, 2000). When experiencing identity conflict, founders perceive tension between elements of the identity enacted within the venture and other identities held at the same time, such as those based on personal values or beliefs (Powell & Baker, 2014; Shepherd & Haynie, 2009). For example, Lily from Lambda said:

> It was somehow not clear whether the content of the venture was something I could still identify with […] ever since we began to sell [the product] as an advertising article. […] At some point I felt empty because I realized this is not at all what I started this venture for. This is silly. […] And with time came clarity […] that this was like energy lost to the void and then the energy definitely goes. (Interview 3)

This quote illustrates how in tackling the entrepreneurial challenge of positioning her product in the market, Lily felt conflicted between her role in the venture and a deeply held personal identity, which over time drained her entrepreneurial energy and led to entrepreneurial fatigue. Table 12 shows further examples of how experiencing identity conflict can trigger entrepreneurial fatigue.

Therefore, our data suggest that through disillusionment with the venture and identity conflict, founders may experience a state of entrepreneurial fatigue in which their entrepreneurial energy reservoir is empty (i.e., move from the eudaimonic phase to the destructive phase of our model in Figure 7). We were able to identify three pathways describing the founders' ensuing engagement with the venture. Two pathways led back into the

eudaimonic phase or into the diverting phase through recovery or escape from entrepreneurial fatigue, while the third was a vicious cycle where founders remained in the destructive phase, fluctuating between entrepreneurial fatigue and low entrepreneurial energy. We discuss each pathway in turn.

4.4.3 Recovering from Entrepreneurial Fatigue through Feelings of being Empowered

Some of the founders in our dataset showed signs of recovering from entrepreneurial fatigue, such that they were once again able to completely refill their entrepreneurial energy reservoir. We found that feeling empowered facilitated the founder's transition from an empty entrepreneurial energy reservoir to a full one. Empowering refers to the process by which individuals gain intrinsic task motivation for their task or work role (Spreitzer, 1995). In the context of our study, empowering feelings were elicited by a founder being able to rely on co-founders for task-related or emotional support, as well as receive positive validation of efforts put into working on the venture. For example, Matt from Mu spoke about being able to rely on his co-founder: "Mike is there and you notice that he fully supports you. […] If I [were to] write him yesterday night at like 11:00 [saying], 'Hey, I need this and this number until tomorrow', then I know that tomorrow morning the number will be there" (Interview 1). Thus, Matt felt he could depend on his co-founder to understand him and provide task-related support. In Interview 2, Matt further reflected:

> Mike's perceptions during the time when things were going really bad for us [were really important]. We went skiing and snowboarding one weekend and I didn't have much to smile about, but […] I saw Mike is sitting in the same boat and he still takes the weekend to enjoy skiing or whatever. I think that was a very important moment […] and since then I am definitely alert, committed, motivated, and I notice this in the results of my work.

Matt added, "If you had asked me in March if I believe in my idea, I would have said 'Meh…', but in the meantime I am fully convinced of it again." These quotes illustrate how the positive spirit shown by his co-founder made Matt feel empowered and thus helped to refuel his energy.

Interestingly, although a founder's recovery from entrepreneurial fatigue through feeling empowered may appear to be highly reliant on extrinsic factors, such as co-founders or external partners, our data suggests that intrinsic factors like willingness to accept support are also important. For example, to feel empowered by a co-founder's support, the founder experiencing entrepreneurial fatigue needed to accept this support. Owen from Omega in Interview 1 said:

> We recently discussed what our product should be able to do. Olaf, [my co-founder] who is responsible for the technical implementation, did not understand. I often communicated it to him and assumed he understood what I meant. […] Two weeks later

> we […] realized [the product] is not working properly and I said, 'Well, I told you so.' That kind of thing just leads to conflict. […] It was definitely a stressful situation.

However, reflecting on his entrepreneurial fatigue one year later in Interview 3, Owen explained, "I used to always decide everything about product planning and say exactly what features should come next. […] These conflicts robbed me of energy […]. Now that I have left [product planning] a bit more to my co-founders […] it is no longer such a conflict situation." Thus, while others may empower a founder to support recovery, crucially, the founder must make the necessary changes.

4.4.4 Escaping Entrepreneurial Fatigue through Redirecting Energy and Exit

The second pathway from entrepreneurial fatigue we identified in our data involved the founder redirecting energy into alternative endeavors and beginning to feel increasingly driven to exit from the venture or, in some cases, actually following these intentions and leaving the venture. When founders redirected energy, this involved considering alternative options to continuing with the current venture and feeling a lack of care about the future of the venture. For example, Andrew from Alpha (Interview 2) rather unenthusiastically said, "So it would in some ways hurt me if from one day to the next the venture was to fail, but I nevertheless feel like my commitment is now dangerously low." Redirecting energy could also involve taking up other side projects. For instance, Oscar from Omega (Interview 2) said, "I have had a consulting business since a few years now and already [three months prior to leaving Omega] I started a consulting project; there is now also a follow-on project that I am working on". Therefore, a founder may begin to feel increasingly disconnected from a venture and start directing energy into other pursuits.

Indeed, for the founders experiencing entrepreneurial fatigue, we found that redirecting energy could lead them to feel increasingly inclined to exit the venture or in some cases actually result in the founder's exit. For example, Oscar from Omega talked in Interview 2 about how his lack of energy for the venture and negative perceptions of his co-founders' competencies ultimately led to him "becoming emotional", saying "I can remember a specific week in which I felt daily that there was this [tension] in the air, no matter what [my co-founder and I] spoke about". As a result, Oscar left the venture soon afterwards, reflecting, "I was really just waiting to say that I'm out. So, basically, if Owen and the others hadn't spoken then, I probably would have left a week later of my own accord" (Interview 2). Similarly, Andrew from Alpha explained in Interview 2 that he had spoken to a close friend about his lack of energy for the venture, saying, "I recently told her that I am at a point now where I somehow can't and don't want to continue anymore". Indeed, three months later, Andrew had scaled back his

involvement in Alpha and started a new venture with different co-founders. After another four months, Andrew exited from Alpha entirely. Thus, entrepreneurial fatigue can develop into founders feeling so disconnected from their venture that they direct energy into other endeavors and eventually exit from the venture.

4.4.5 Failure to Recover due to Negatively Spiraling Belief in the Venture

Not all founders in our sample were able to recover or escape from entrepreneurial fatigue. Indeed, some were only temporarily able to transition from an empty entrepreneurial energy reservoir to a low one before once again falling back into a state of entrepreneurial fatigue. Eventually, this can result in a self-reinforcing decrease of entrepreneurial energy. Therefore, in this pathway the founder can experience a negatively spiraling belief in the venture. Here, the founder is likely to increasingly lose conviction in the value of the venture and can experience helplessness in connection with controlling his or her own entrepreneurial energy. For instance, in speaking about his entrepreneurial fatigue and the tasks he needed to work on, Sam from Sigma said, "I [don't have the energy to] push back to stop so many [tasks] coming in. […] I can only say that the day has 24 hours and what can be implemented within that time will be" (Interview 2). As the quote illustrates, because of his empty entrepreneurial energy reservoir, Sam felt helpless to control his workload and the venture seemed to demand more energy than he felt able to invest. Similarly, Nick from Nu said "I see that regardless of how much energy I put in, […] there is only headwind and no tailwind, so to speak" (Interview 3). He added, "[my energy for the venture] is a curve going up and down but the general trend is definitely downward […] Maybe a battery is the best [metaphor] because with batteries the chemical composition inside them can change over time so that the capacity decreases. There is definitely less capacity than before." This memory effect in batteries seemed to us an apt metaphor for illustrating Nick's negatively spiraling belief in the venture.

In dealing with a negatively spiraling belief in the venture, founders may nevertheless find it difficult to periodically detach and continue to invest energy in the venture. For instance, in speaking on the difficulty of taking a few days off to detach and recharge his energy, Nick explained, "I currently have to invest lots of energy just to keep things halfway on track. If I took a few days off, it wouldn't work. […] Even if I try to switch off, unless I am doing something active, I find myself immediately thinking about [the venture]" (Interview 3). Similarly, Sam from Sigma (Interview 1) said, "The workload is too high. [Detaching] is just not possible." These quotes illustrate how difficult it can be for a founder with entrepreneurial fatigue to refuel by periodically detaching from the venture.

Importantly, even if founders feel drained of entrepreneurial energy, they may still continue to work on the venture because they feel they have already invested so much in the venture or because enough minor positive experiences continue to bolster their entrepreneurial energy. For instance, Sam from Sigma said (Interview 2), "One asks oneself, to what extent is one really free to exit? […] If I don't want to throw away what I have worked for, then I am not free [to exit]". In a similar vein, and highlighting the role of small, positive experiences, Nick (Interview 3) said, "I don't actually understand why I do it […], probably because we have invested so much time in it […] and there is actually always some external event that again motivates one's self". However, Nick admitted that unlike his co-founder, who "at least tries to keep searching for possibilities to turn things around, I am more inclined to say that if we can't at least achieve this and this, it makes no sense to keep going". While sunk costs and small positive events keep a founder in the venture, the founder's belief in the venture may be in a negative spiral that keeps energy low.

In searching for potential alternative explanations for how and why founders developed entrepreneurial fatigue, we considered multiple factors. Checking our data for individual-level antecedents yielded no clear pattern between factors such as individual personality traits, level of prior entrepreneurial experience, or the number of hours a founder worked on the venture and the development of entrepreneurial fatigue. Since all of the ventures in our sample were founded by entrepreneurial teams, we additionally considered to what extent entrepreneurial fatigue may be driven by team dynamics. While co-founders did indeed form an important component of the internal venture environment for the founders in our study, our data suggested that co-founders were not always the contributors – or at least not the *only* contributors – to a founder developing entrepreneurial fatigue. Moreover, we could establish no pattern between whether or not co-founders contributed to the development of entrepreneurial fatigue in a founder and the affected founder's ensuing engagement in the venture.

4.4.6 Managing Entrepreneurial Energy to Avoid Entrepreneurial Fatigue

Our primary focus in the data analysis was on founders experiencing entrepreneurial fatigue and eight out of our sample of 38 founders experienced entrepreneurial fatigue. However, the majority of the founders we studied did not develop entrepreneurial fatigue during the timeframe of our study, remaining in the eudaimonic phase despite working in the same ventures as those founders who experienced fatigue and faced the same entrepreneurial challenges. For example, on the challenge of managing existing resources, particularly co-founders, Matt from Mu (Interview 1) spoke about the sudden, "demoralizing" nature of a speech made by a co-founder who soon afterwards quit during a particularly stressful time for

the venture. In speaking about the same incident, Matt's other co-founder, Mike, perceived this as a manageable challenge, saying "the changes that have happened have not weighed down on me too much. Or at least I take them positively and try to make the best out of them" (Interview 1). Thus, while tackling an entrepreneurial challenge can consume energy, it does not necessarily empty the founder's entrepreneurial energy reservoir completely.

When we analyzed our data for explanations of why entrepreneurial challenges do *not* lead to fatigue, we found that this may be due to founders periodically detaching themselves from the venture. Detachment refers to the act of "disengaging oneself psychologically from work" (Sonnentag & Bayer, 2005, p. 395). Specifically, periodically detaching from the venture to recharge involves mentally switching off from work, both behaviorally, in that founders may avoid work-related calls, and psychologically, in that founders pause their thinking about the venture. The founders we interviewed described periodically detaching from the venture as involving different activities, such as engaging in hobbies, or relaxation. For example, Brian from Beta said:

> I am someone who takes a bit of active time off with also some rest in between. […] Then I can recover very quickly and regain […] energy. I don't just do this through vacations, I try to do it on a weekly basis. I really do take a day where I do nothing [for the venture]. […] Just occupying myself with other things is enormously helpful. (Interview 1)

This and other examples in our data (see Table 13) suggest founders can proactively detach from the venture to return to working on their venture with a recharged entrepreneurial energy reservoir. In the same interview, Brian said he likes to surround himself with "a completely different group of people, people who have no idea about [the venture's industry]". Thus, it appears that detaching from the venture also has a social component, in that founders can recharge entrepreneurial energy by spending time with individuals not related to the venture. Taken together, our interviews suggested that founders may avoid entrepreneurial fatigue by balancing energy used up in tackling entrepreneurial challenges with energy recharged through periodically detaching from the venture.

Table 13. Representative quotes for how detaching from the venture can allow a founder to move from a low to full entrepreneurial energy reservoir

First order codes	Representative Quotes
Doing recreational activities	Brian from Beta (Interview 1): Yesterday morning, for example, I said I need a half – or three-quarter-day of doing something [other than working on the venture]. So I booked a golf training session and […] after that was finished the sun was still shining for another hour or two so I stayed outside and then later on in the evening I did nothing apart from work. That for me is work-life-balance. I naturally had a thousand other things on the way to the golf course – about ten people called me telling me all the things they need right away – but I said, 'I am away. You will have to do without me until this evening.'

	Dean from Delta (Interview 1): I spend a lot of time training horses, with my family, with my parents. We have four horses, most of them bought young, and I train them. I am now training a four-year-old horse for example, which is a completely different world compared to the technical and business world. […] On the weekend I also play music – that is again something totally different [from the working on the venture].
Spending time with family and friends	Adam from Alpha (Interview 1): I really like to help people so I like to try to coach my friends with programming and besides that […] especially [since] my girlfriend is in [another city] and sometimes I go there or she comes here. […] I am a pretty social person and like to do stuff with my friends [outside of the venture].
	Mike from Mu (Interview 1): I always try to take some time off [from working on the venture]. […] I have a little daughter who is 14 months old and that is something where one can really quickly switch off [from work] and very quickly becomes grounded again.
Taking time for rest	Isaac from Iota (Interview 1): On principle, I go home from work and switch off [from work] first, or I leave during the lunch break. Of course, there is always something to do [for the venture], but then I still take my lunch break. I just take the time [to be away from work].
	Oscar from Omega (Interview): If […] I don't find energy [for working on the venture], then I go to a café for three hours at lunchtime or meet someone. […] If I'm faced with a problem and I don't know the solution or can't motivate myself, then it is best to do something completely different and then get back to it two hours later. Then it usually goes better than sitting there and hitting your head against the wall.
Switching off phone/computer	David from Delta (Interview 1): My phone is always on vibrate – it doesn't ring, it only vibrates. And when I go hiking it is anyways in my rucksack, so I am not on my phone [working on the venture] at all then.
	Mike from Mu (Interview 1): When I am doing sports or taking time off, I put my phone off to one side and don't look at who has written me emails [about the venture].

However, our data also revealed that it can be difficult for founders to remain in the eudaimonic phase by periodically detaching from the venture. Lily from Lambda said:

> When my ego is loud and thinks something needs to be done, I find [detaching] hard […]. For example, I know that my energy level is very low today and I want to take a few days to switch to going into the mountains […] but I also know about everything lying on my desk right now. (Interview 3)

This quote suggests that periodically detaching from the venture is in itself a non-trivial challenge for founders. Yet, if a founder does manage to sustain a full entrepreneurial energy reservoir and experience a positively spiraling belief in the venture, the reservoir itself may grow. For instance, in comparing his energy level at the time of Interview 3 to earlier in the founding process, Owen from Omega said: "When you really see that customers are willing to pay money, that brings a whole new level of energy. Then there are also these feelings of success. That really contributes to [my energy]. [The venture] is no longer just a concept". This implies that receiving positive, validating feedback can strengthen a founder's conviction of the value of the venture, thus growing entrepreneurial energy over time. Moreover, a positively spiraling belief in the venture may also involve the founder feeling more resilient to setbacks. For example, Matt from Mu (Interview 3) reflected he no longer lost significant energy to

setbacks, saying "if I don't get to the expected solution today, but only in three weeks, that's OK. I think I'm kind of hardened [to setbacks] now". Matt's positively spiraling belief in the venture effectively grew his entrepreneurial energy reservoir, so that previously draining experiences no longer affected his energy so severely.

In summary, our findings suggest that founders may develop entrepreneurial fatigue when tackling entrepreneurial challenges, by becoming disillusioned with the venture or experiencing identity conflict. The development of entrepreneurial fatigue involves moving from the eudaimonic phase, where the founders are largely in control of the fluctuations in their entrepreneurial energy, to the destructive phase, where founders suffer from a severe and sustained drop in entrepreneurial energy. Founders may move back into the eudaimonic phase by recovering energy through feeling empowered or enter the diverting phase by redirecting energy into alternative pursuits, thus escaping entrepreneurial fatigue through ultimately exiting from the venture altogether. However, founders that fail to recover or escape from entrepreneurial fatigue remain in the destructive phase, stuck in a negative spiral of losing their belief in the venture. Interestingly, many founders in our sample remained in the eudaimonic phase, avoiding entrepreneurial fatigue, despite facing similar entrepreneurial challenges; these founders periodically detached from the venture to refuel, so that their energy reservoir fluctuated between full and low, rather than hitting zero.

4.5 Discussion

In this study, we introduce the concept of entrepreneurial fatigue and build a dynamic model of entrepreneurial energy, drawing on 78 interviews with 38 founders, of which eight developed entrepreneurial fatigue over the course of our study. Our model captures how founders move between different levels of entrepreneurial energy for their venture and explains why some founders experience entrepreneurial fatigue while others do not. Our study has important implications for research on entrepreneurial well-being, adversity, and founder exits.

4.5.1 Theoretical Implications

By building theory on the development of entrepreneurial fatigue, we contribute to the growing work on entrepreneurial well-being and shed light on the wearying side of entrepreneurship (Shepherd, 2019; Stephan, 2018; Wiklund et al., 2019). Apart from a small number of recent studies that have primarily focused on the physically exhausting aspects of entrepreneurship (Gish, Wagner, Grégoire, & Barnes, 2019; Gunia, 2018; Kollmann et al., 2019; Williamson, Battisti, Leatherbee, & Gish, 2019), the potentially harmful effects of engaging in entrepreneurial activities for founders have received little attention. Interestingly, while the strenuous nature of entrepreneurial activities is a commonly cited drain on a founder's

energy (Kollmann et al., 2019; Murnieks et al., 2019), our study suggests entrepreneurial challenges are likely *not* an automatic trigger for entrepreneurial fatigue, as the energy drained by them may be counterbalanced by the founder periodically detaching from the venture to recharge.

Rather, our emerging model suggests that entrepreneurial fatigue develops through a founder's growing disillusionment with the venture and the experience of identity conflict, which seem to attack fundamental aspects of the founder's belief in the venture and may therefore account for a significant and lasting drop in the founder's energy. Subjective interpretations of entrepreneurial challenges rather than the challenges per se seem to trigger entrepreneurial fatigue. For instance, many founders find their initial expectations about their venture to be overly optimistic and suffer from disappointments (Cassar, 2010; Ucbasaran et al., 2003). We find that founders differ on whether such experiences challenge their prior beliefs enough to disillusion them and trigger entrepreneurial fatigue. Thus, studying how founders adjust – and react to – their prior beliefs about the venture may be helpful for advancing our understanding of disillusionment and how it influences fluctuations in entrepreneurial well-being.

Further, extant literature points to the close links between entrepreneurship and identity, such that founders may experience and need to deal with identity conflicts (Powell & Baker, 2014; Shepherd & Haynie, 2009). Such identity conflicts can prompt founders to find new roles, for instance through taking advantage of the context provided by adversity (Powell & Baker, 2014). We extend these findings by showing how identity conflicts can attack a founder's fundamental belief in the venture, triggering a significant drop in entrepreneurial energy. Moreover, our work highlights that finding new roles within the venture (e.g., by accepting less control over some tasks) may be part of the overall mechanism of feeling empowered; this can replenish energy through allowing a founder to once again find meaning and self-fulfillment in working on the venture. Thus, our study calls for deeper investigation into how identity conflicts influence entrepreneurial well-being, as well as the role of empowering as a potential recovery mechanism.

We also extend extant literature on entrepreneurial well-being by emphasizing the cyclical dynamics through which a founder's energy for the venture may develop. While recent studies offer important initial insights into the antecedents and outcomes of a founder's exhaustion (Gish et al., 2019; Kollmann et al., 2019), many of the analyses have remained at the level of linear relationships (Murnieks et al., 2019), thus omitting potential dynamic aspects that are non-linear over time. In contrast, our model of entrepreneurial fatigue highlights the

role of both balancing and reinforcing feedback loops within the process. Founders may be able to offset the energy lost in tackling entrepreneurial challenges by periodically detaching from the venture to recharge. However, when this balance is threatened by disillusionment and identity conflict, founders fall into a state of entrepreneurial fatigue from which they may find their belief in the venture spiraling downwards. The balancing and feedback loops in our model highlight the importance of taking a dynamic perspective in entrepreneurial well-being research.

Finally, our model highlights the role of the founder in shaping his or her own entrepreneurial well-being by managing entrepreneurial energy to avoid/recover from entrepreneurial fatigue. Our study suggests that founders' agency matters in managing their entrepreneurial energy reservoir, both when it is low and when it is empty. Indeed, we identify different types of agency and when they can be applied. When a founder's energy reservoir is low, he or she can choose to periodically detach from activities or thoughts related to the venture in order to recharge entrepreneurial energy. However, when the founder's energy reservoir is empty, the role played by the founder changes, in that it is important to become open and accepting of different ways to empowerment. Here the founder's agency is directed outwards to get help from other people in their social context, such as co-founders and mentors. Investigating the nuances of these different types of agency may be helpful for gaining a better theoretical understanding of the role of the founder in enabling recovery mechanisms in entrepreneurial well-being research.

Much of the literature on how founders deal with adversity focuses on the strategic, venture-level responses that founders may develop (Powell & Baker, 2014). Our work highlights that founders may also have to respond to adversity through managing their personal energy for the venture. In particular, how founders perceive the adversity associated with entrepreneurial challenges plays a key role in how founders can manage their energy. Indeed, our study suggests that even in the same venture, there are important between-individual differences in how founders perceive the same adversity, such that only some founders develop entrepreneurial fatigue. Since these founders are unable to contribute to the venture's progress to their full potential, it is important for future theorizing on adversity to consider potential heterogeneity in founders' subjective interpretations of adversity (even within the same venture), rather than focusing only on the objective reality of how adversity influences the venture.

Further, a key stream of work in adversity research seeks to understand resilience, that is, the process through which an individual manages to 'bounce back' from adversity to

maintain functioning (Williams, Gruber, Sutcliffe, Shepherd, & Zhao, 2017). Importantly, we find that a founder's resilience may be worn down over time through prolonged engagement with adversity. In particular, adversity can cyclically wear down a founder's energy for working on the venture. For instance, founders experiencing entrepreneurial fatigue may be resilient enough to periodically achieve enough energy to maintain some level of functioning. However, persisting between states of low energy and entrepreneurial fatigue can make it increasingly difficult for founders to bounce back to their full energy capacity or even to exit from the venture. In highlighting how founders can become stuck in such low energy states, we address recent calls to address the hitherto largely ignored 'dark side' of resilience, i.e., the costs associated with maintaining functioning in the face of adversity (Williams et al., 2017). Future studies can explore the dynamic (and dark) nature of resilience in the face of prolonged adversity.

Moreover, our model of entrepreneurial fatigue contributes to better understanding the behaviors that may lead to or preempt co-founder exits. Extant work suggests that heterogeneity in co-founders' prior entrepreneurial experience (Ucbasaran et al., 2003) and negative team interaction spirals brought about by perceived injustices in equity distribution can lead to members exiting the team (Breugst, Patzelt, & Rathgeber, 2015). Moreover, literature also highlights the complex psychological disengagement processes that founders may engage in surrounding their exit from the venture (Rouse, 2016). We extend this work by emphasizing further complexities inherent in the exit process. In particular, our findings around the prolonged experience of entrepreneurial fatigue triggered by disillusionment and identity conflict, as well as the gradual redirection of energy into other endeavors, enrich the current understanding of how founders may come to leave the venture.

Finally, some founders continue to work on an underperforming venture because of their significant investments of time and energy in the venture (DeTienne, Shepherd, & Castro, 2008; Sleesman, Lennard, McNamara, & Conlon, 2018). We extend these findings by contextualizing exit decisions using an entrepreneurial energy perspective. We show that founders may persist even when faced with disillusionment or identity conflict, which leaves them with little to no energy for working on the venture. The deep personal responsibility that founders may feel for their venture and employees, as well as small positive events, can trap founders in a vicious cycle of persistence and entrepreneurial fatigue. Thus, founders may prolong their involvement in the venture, often with significant costs to their personal well-being (and potentially even to that of the venture), such that the exit process becomes prolonged and the exit decision more

complex. Future work can build on our insights to explore further implications of reluctance to exit for founders and their ventures, particularly under conditions of entrepreneurial fatigue.

4.5.2 Limitations and Opportunities for Future Work

Although our sampling approach allowed us access to rich, empirical insights that were crucial for building theory on the development of entrepreneurial fatigue over time, we acknowledge that this methodological approach may reduce the generalizability of our results. Future studies can develop the construct of entrepreneurial fatigue (or entrepreneurial energy) further through scale development (Clark & Watson, 2016) based on our conceptualization to pave the way for larger-scale quantitative studies of antecedents and outcomes. The concept of entrepreneurial fatigue may be enriched by studying its longer term effects (e.g., on subsequent founding endeavors). Another limitation of our work is that we rely on each founder's own perception of his or her entrepreneurial energy. Future studies could extend our findings by using biological measures that relate to entrepreneurial fatigue, e.g., using apps and wearables to track changes in emotions and physical energy (Eatough, Shockley, & Yu, 2016). It would be especially interesting to understand how biological measures of physical fatigue might relate to perceptual measures of entrepreneurial fatigue. Finally, a particularly interesting avenue for future research on entrepreneurial fatigue may be to further explore the role of the entrepreneurial team. While our findings suggested co-founders can play an important role in both the development of and recovery from entrepreneurial fatigue, much remains to be learned about the interplay between team dynamics and entrepreneurial fatigue. For instance, although co-founders may be able to help a founder to recover from entrepreneurial fatigue, the co-founders themselves might feel drained of their entrepreneurial energy through working with the affected founder over time.

4.5.3 Practical Implications

Our study also holds a number of practical implications for founders and other stakeholders in the new venture context, such as mentors and entrepreneurship educators. First, understanding the cycles through which entrepreneurial fatigue develops may help founders to better manage their energy for the venture. For instance, founders can engage in mindfulness exercises to become better at recognizing when they need to detach from the venture to recharge their entrepreneurial energy (Chong et al., 2020). Mindfulness exercises help individuals grow their awareness through focusing on the present moment without judgment (Gu, Strauss, Bond, & Cavanagh, 2015). Mindfulness can also improve an individual's ability to psychologically detach from work during breaks, so that when founders do engage in non-work activities, they can more effectively use these to recover energy (Chong et al., 2020; Haun, Nübold, & Bauer,

2018; Murnieks et al., 2019).

Second, our findings suggest that co-founders and external stakeholders, such as business partners and mentors, play an important role in empowering founders to help them recover from entrepreneurial fatigue. Co-founders may be able to prevent the escalation of a co-founder's entrepreneurial fatigue into a negative spiral by offering task-related and emotional support to empower the affected individual. Similarly, mentors and external partners could also play an important role in empowering a founder suffering from entrepreneurial fatigue by providing positive validation of his or her efforts in developing the venture. Recognizing the emergence of entrepreneurial fatigue may also be an important form of signaling the need for changes within the venture – whether this involves role redistribution among co-founders or the realization that the affected founder (and the venture itself) may be better off if he or she were to exit from the venture.

Finally, the role of disillusionment in developing entrepreneurial fatigue, particularly for first-time founders[10], may be influenced by overly positive portrayals of entrepreneurship as a career and the glamorization of entrepreneurial success stories in the media (Nicholson & Anderson, 2005). In this context, entrepreneurship educators could have an especially important role to play in making potential founders aware of the negative psychological and emotional reactions they may have to engaging in entrepreneurship (Bandera, Santos, & Liguori, 2020; Shepherd, 2004) and entrepreneurial fatigue in particular. Extant literature suggests entrepreneurship education can influence entrepreneurial intentions among students (Piperopoulos & Dimov, 2015). Teaching about entrepreneurial fatigue can help entrepreneurship educators to better prepare future founders for the journey ahead – potentially reducing the likelihood of future disillusionment and the associated energy drain.

4.5.4 Conclusion

By studying how entrepreneurial fatigue develops over time, we build a dynamic model of the process through which founders may lose and recover their energy for working on the venture. Moreover, by highlighting the role of disillusionment and identity conflict in the development of entrepreneurial fatigue, our work points to the importance of understanding a founder's subjective interpretations of entrepreneurial challenges. On a positive note, despite the severe and prolonged nature of entrepreneurial fatigue, founders can break free of this state by redirecting energy towards exit or becoming empowered within the current venture.

[10] We find entrepreneurial fatigue may be experienced by both first-time and more experienced founders.

5 Conclusion and Avenues for Future Research

5.1 Summary of Findings and Contributions

The essays in this dissertation apply diverse methodological approaches to shed light on the entrepreneurial cognition and well-being of founders of early-stage ventures. The dissertation has several theoretical implications for both entrepreneurship and general management literature, as well as for practitioner audiences.

5.1.1 Individual-level Cognition in Entrepreneurial Teams.

All three essays in this dissertation contribute to extending our understanding of various facets of individual-level cognition in entrepreneurial teams. Essay I (Chapter 2) provides micro-level insights into how co-founders process and share information with their team during entrepreneurial team ideation. Extant literature suggests that individuals may incompletely attend to information, as well as be biased in how they interpret this information (Brodbeck et al., 2007). Yet the role of individuals' incomplete and biased information processing in influencing how co-founders shape entrepreneurial team ideation remains poorly understood. In the first essay, I identify instances of incompleteness in co-founders selectively sharing information within the team, while I observe bias in that co-founders contextualize information while sharing it. Interestingly, the study also reveals a third facet to individual-level information processing, in that individuals may indirectly share information by directly proposing team outcomes (e.g., entrepreneurial ideas) based on their own information without first sharing this information within the team. Importantly, this approach to information processing has significant implications at the team-level, since an individual's bypassing of explicit information sharing in this way tends to lead to the individual in question dominating the team's subsequent decision making. The elucidation of these three mechanisms of how individuals process and share information within teams can help both entrepreneurship and management scholars to consider how these mechanisms mediate the role of individual-level cognitions in shaping outcomes at higher levels of analysis (e.g., team cognition).

Essay II (Chapter 3) contributes to understanding how entrepreneurial team members develop cognition-based trust in their team. Much of the work on the development of an individual's trust in their team highlights the importance of members' shared history and backgrounds (Beckman et al., 2007; Eisenhardt & Schoonhoven, 1990). However, these factors are likely to quickly lose importance compared to factors emerging from the team's context, such as behaviors and perspectives within the team—i.e., social information (Costa et al., 2018; Salancik & Pfeffer, 1978). Indeed, the second essay suggests that a considerable amount of

cognition-based trust may develop in the post-founding phase through the social information processing arising from co-founders' team narrative resources, but that this relationship is contingent on a founder's perceived venture-external resource scarcity, a characteristic constraint for new ventures (Baker & Nelson, 2005; Klotz et al., 2014). Thus, future studies on trust in entrepreneurial teams should not only pay greater attention to factors that emerge from entrepreneurial team collaboration prior to venture foundation, but also how social interaction post-foundation shapes collaboration, contingent on the venture environment.

Additionally, by considering how resource scarcity might influence the formation of individual-level attitudes about the team, this study informs research on the role of environmental factors in shaping attitudes in entrepreneurial ventures. I theorize and test the role of perceived resource scarcity as an environmental factor that influences how a founder processes social information about the entrepreneurial team and develops trust in the team (Costa et al., 2018; Salancik & Pfeffer, 1978). Importantly, my findings suggest that, rather than directly shaping a founder's cognition-based trust in their team, perceived resource scarcity may have a more indirect effect through moderating the influence of entrepreneurial team narratives on the founder's cognition-based trust in the team. Existing studies suggest a founder's cognition-based trust has important implications for a variety of venture-level outcomes (De Jong et al., 2016; De Jong & Elfring, 2010; Dirks & Ferrin, 2001). My findings are consistent with recent arguments that a venture's environment not only has implications for venture-level outcomes, but also for team processes, which can themselves influence venture outcomes (Bromiley & Rau, 2016).

Finally, Essay III (Chapter 4) offers insights to the literature on how co-founders make sense of adversity and adds nuance to our understanding of a founder's decision to exit from a new venture. First, my study highlights that how founders perceive the adversity associated with entrepreneurial challenges plays a key role in how the founders then manage their energy for working on the venture. Indeed, our study suggests that even in the same venture, there are important between-individual differences in how founders perceive the same adversity, such that only some founders develop entrepreneurial fatigue. Since these founders are unable to contribute to the venture's progress to their full potential, it is important for future theorizing on adversity to consider potential heterogeneity in founders' subjective interpretations of adversity (even within the same venture), rather than focusing only on the objective reality of how adversity influences the venture.

My model of entrepreneurial fatigue also contributes to better understanding the behaviors that may lead to or preempt co-founder exits. Literature highlights the complex

psychological disengagement processes that founders may engage in surrounding their exit from the venture (Rouse, 2016). I extend this work by identifying further factors triggering the exit decision. In particular, my findings around the prolonged experience of entrepreneurial fatigue brought about by disillusionment and identity conflict, as well as the gradual redirection of energy into other endeavors, enrich the current understanding of how founders may come to leave the venture by contextualizing the exit decision using an entrepreneurial energy perspective. Applying this perspective in future studies on founder exits may provide important insights into the more emotional or socially-driven aspects influencing the exit decision, which might help to better explain phenomena such as founders' reluctance to exit despite venture underperformance.

5.1.2 Entrepreneurial Team Cognition

The first and second essays in this dissertation also have implications for how we theorize about entrepreneurial team cognition. The first essay demonstrates how team members' individual-level inputs interact with one another at the team-level in order to shape the entrepreneurial team ideation process. In particular, the model I present in this study highlights that entrepreneurial team cognition continuously shifts as individual-level information enters, dominates, and leaves the focus of the entrepreneurial team cognition. In doing so, my work complements the macro-level view of entrepreneurial team cognition by elaborating on the micro-level dynamics involved in its development over time, which the composition-based perspectives that have thus far dominated entrepreneurial team cognition research would otherwise assume away (Kozlowski & Klein, 2000; Mathieu et al., 2014).

The insights offered in this essay may also enrich scholarship on team cognition in the wider management literature. For example, Harvey (2014) proposes a compilation-based model of how teams produce breakthrough creative ideas through an iterative process of creative synthesis. My micro-level findings in the first essay extend this model to incorporate the role of information sharing in influencing how individual-level inputs play into the creative synthesis process. In doing so, I address recent calls for team cognition research that moves beyond the oversimplification of team cognition through team-level aggregation approaches and takes into account the complexities involved in developing shared understandings within teams (Mohammed et al., 2021). My work highlights the importance of considering not only that team members contribute differently to team cognition, but that these differences may change over time and be subject to complex interpersonal processes.

The second essay extends our understanding of a hitherto underexplored aspect of entrepreneurial team cognition, namely entrepreneurial team narratives. Importantly, while

prior work on entrepreneurial team narratives – and entrepreneurial narratives more generally – has focused on narrative content (e.g., Garud & Giuliani, 2013; Jones et al., 2008; Mantere et al., 2013), my work contributes a structural perspective to this literature to provide important insights into how entrepreneurial team members process social information in relation to each other. By developing theory on narrative topic heterogeneity in a team, I show that the interaction of different social realities within the same team can have a considerable influence on each co-founder's cognition-based trust in the team. In doing so my work extends extant literature on team diversity (Beckman et al., 2007; Knockaert, Ucbasaran, Wright, & Clarysse, 2011). Interestingly, while similarity attraction and homophily theories (Byrne et al., 1971; Ruef et al., 2003) would suggest heterogeneity in co-founders' perceptions of the entrepreneurial team (i.e., heterogeneity in narrative topics in the team) may be detrimental for trust (Harrison & Klein, 2007; Locke & Horowitz, 1990), my study of entrepreneurial team narratives suggests heterogeneity of narrative topics within an entrepreneurial team may actually be positively related to a founder's cognition-based trust in the team.

Moreover, this essay highlights the importance of considering the contextual environment in which an entrepreneurial team is situated. By theorizing how the uniqueness of narrative topics in a team is related to a founder's cognition-based trust in the team, contingent on the founder's perceived resource scarcity, I address the tension between pursuing legitimacy and distinctiveness through entrepreneurial narratives (Navis & Glynn, 2011), particularly the influence that the choice between the two has on individual-level attitudes. Specifically, our findings suggest that when a founder perceives resources to be scarce – and so convincing resource providers becomes crucial – the uniqueness of narrative topics (i.e., distinctiveness) is less likely to increase their cognition-based trust in the entrepreneurial team. Rather, in this context, more popular narrative topics may be more strongly associated with legitimacy, which increases the chances for support from external stakeholders, and therefore more likely to increase the founder's cognition-based trust in the entrepreneurial team.

5.1.3 Entrepreneurial Well-being

In recent years, a growing stream of entrepreneurship research has recognized the importance of studying entrepreneurial well-being. The third essay in this dissertation extends work in this field in several ways. First, by building theory on the development of entrepreneurial fatigue, I contribute to the growing work on entrepreneurial well-being and shed light on the dark side of entrepreneurship (Shepherd, 2019; Stephan, 2018; Wiklund et al., 2019). Interestingly, while the strenuous nature of entrepreneurial activities is a commonly cited drain on a founder's energy (Kollmann et al., 2019; Murnieks et al., 2019), my findings suggest

entrepreneurial challenges are likely not an automatic trigger for entrepreneurial fatigue, as the energy drained by them may be counterbalanced by the founder periodically detaching from the venture to recharge. Rather, my model suggests that entrepreneurial fatigue develops through a founder's growing disillusionment with the venture and the experience of identity conflict, which seem to attack fundamental aspects of the founder's belief in the venture and may therefore account for a significant and lasting drop in the founder's energy. Subjective interpretations of entrepreneurial challenges rather than the challenges per se seem to trigger entrepreneurial fatigue.

Second, I also extend extant literature on entrepreneurial well-being by emphasizing the cyclical dynamics through which a founder's energy for the venture may develop. My model of entrepreneurial fatigue highlights the role of both balancing and reinforcing feedback loops within the process. Founders may be able to offset the energy lost in tackling entrepreneurial challenges by periodically detaching from the venture to recharge. However, when this balance is threatened by disillusionment and identity conflict, founders fall into a state of entrepreneurial fatigue from which they may find their belief in the venture negatively spiraling. The balancing and feedback loops in my model highlight the importance of taking a dynamic perspective in entrepreneurial well-being research.

Finally, the third essay emphasizes the role of the founder in shaping their own entrepreneurial well-being by managing entrepreneurial energy to avoid/recover from entrepreneurial fatigue. The findings suggest that founders' agency matters in managing their entrepreneurial energy reservoir, both when it is low and when it is empty. When a founder's energy reservoir is low, they can choose to periodically detach from activities or thoughts related to the venture in order to recharge entrepreneurial energy. When the founder's energy reservoir is empty, the founder's agency is directed outwards to get help from other people in their social context, such as co-founders and mentors. Investigating the nuances of these different facets of agency may be helpful for gaining a better theoretical understanding of the role of the founder in enabling recovery mechanisms in entrepreneurial well-being research.

5.1.4 Practical Implications

From a practical perspective, this dissertation offers several insights for founders in entrepreneurial teams, as well as various other stakeholders in the entrepreneurial context, such as investors, mentors, and educators. The insights offered by the first essay can help entrepreneurial teams to better manage the new venture ideation process. First, becoming aware of how individual-level information may be changed when it is being shared within the team can allow team members to take advantage of this process. Knowing the micro-level

mechanisms of how individual inputs shape team cognitions can help individuals and teams to better position themselves in discussions. For example, team members may learn to introduce their information in a way that is more likely to contribute to team cognition (e.g., by selectively sharing or contextualizing information to emphasize its relevance to the team). Second, understanding how to shift between different modes of building ideas can help teams to avoid becoming stuck within any one mode. For instance, if one team member's contributions start to dominate team cognition, members can challenge this view with factual or experiential information to shift team cognition towards incorporating a broader range of individual inputs.

The second essay points to the importance of entrepreneurial team narratives for a founder's cognition-based trust in the team. Co-founders can use entrepreneurial team narratives to process their team's behaviors and perspectives in order to inform their own attitudes and perceptions of the team. More specifically, the structural aspects of topical heterogeneity and uniqueness of team narratives seem to be associated with increasing cognition-based trust. Fostering a team climate in which heterogeneity in members' perspectives of the team is appreciated, may encourage topically heterogeneous team narratives, which can positively influence cognition-based trust. This may be especially relevant for teams in which members perceive environmental resources to be available. For such teams, developing a distinctive and specific team narrative relative to the venture's environment may also support the development of cognition-based trust. Stakeholders that play a mentoring role for early-stage ventures, such as entrepreneurship educators, accelerators, and incubators, could also support their founders by encouraging topically heterogeneous and unique team narratives.

The third essay also holds a number of practical implications for founders and other stakeholders in the new venture context, such as mentors and entrepreneurship educators. First, understanding the cycles through which entrepreneurial fatigue develops may help founders to better manage their energy for the venture, for instance by engaging in mindfulness exercises to become better at recognizing when they need to detach from the venture to recharge their entrepreneurial energy (Chong et al., 2020). Second, my findings suggest that co-founders and external stakeholders, such as business partners and mentors, play an important role in empowering founders to help them recover from entrepreneurial fatigue. Finally, entrepreneurship educators could have an especially important role to play in teaching about entrepreneurial fatigue to better prepare future founders for the journey ahead – potentially reducing the likelihood of future disillusionment and the associated energy drain.

5.2 Avenues for Future Research

This dissertation provides the foundation for several different avenues of future research – both in terms of extending theorizing on entrepreneurial cognition and well-being as well as applying novel methodological approaches to do so. In the first essay, while I focus on how team members' individual-level inputs shape entrepreneurial team ideation, future studies could apply my compilation-based approach to empirically investigate other activities along the entrepreneurial journey. For example, scholars may observe how team members' inputs shape entrepreneurial team cognition during market entry. More broadly, management scholars could study how team cognitions emerge in alternative decision-making contexts within established organizations. This first essay also shows the value of analyzing real-time video footage of entrepreneurial teams engaging in new venture ideation. Future studies might augment this approach by studying teams over a longer time frame, potentially augmenting filmed interactions with retrospective interviews with co-founders, to gain deeper insights into their team processes (Bjornali et al., 2017). Moreover, recent suggestions to include neuroscience-based approaches to understand team members' inputs to team tasks (Wang et al., 2020) could also provide further insights into entrepreneurial team ideation.

Meanwhile, the second essay demonstrates the role that automated text analytics, such as topic modeling, can play in entrepreneurship and general management research. Such approaches have the advantage of improved replicability of results, scalability to larger datasets, and minimizing the influence of human biases in analyzing narratives (Hannigan et al., 2019). Much of the qualitative data that scholars analyze is textual in nature. While past studies of entrepreneurial narratives often apply qualitative methodologies, which by their nature involve interpreting the meanings of narrative content (Walsh, 1995), deriving the structural dimensions of narratives may require a more formalized approach. My application of an automated topic modeling approach in the second essay enables deriving structural dimensions purely from the narratives (or other textual data) themselves. Moreover, future studies can complement this work with analyses of latent narratives that focus on content (Kibler et al., 2021), as well as methods like computer-aided text analysis, which uses pre-defined dictionaries (Short et al., 2010).

Finally, the third essay may be extended by future studies developing the construct of entrepreneurial fatigue (or entrepreneurial energy) further through scale development (Clark & Watson, 2016) to pave the way for larger-scale quantitative studies of antecedents and outcomes. The concept of entrepreneurial fatigue may be enriched by studying its longer term effects (e.g., on subsequent founding endeavors). Future studies may also extend the work done

in this essay by using biological measures that relate to entrepreneurial fatigue, e.g., using apps and wearables to track changes in emotions and physical energy (Eatough et al., 2016). It would be especially interesting to understand how biological measures of physical fatigue might compare to perceptual measures of entrepreneurial fatigue. Moreover, a particularly interesting avenue for future research on entrepreneurial fatigue may be to further explore the role of the entrepreneurial team. While my findings suggested co-founders can play an important role in both the development of and recovery from entrepreneurial fatigue, much remains to be learned about the interplay between team dynamics and entrepreneurial fatigue.

5.3 Conclusion

This dissertation contributes novel insights into entrepreneurial cognition and well-being in early-stage ventures. Essay I uncovers the micro-level mechanisms underlying how team members' inputs shape entrepreneurial team ideation, thereby taking an important step towards investigating the complexities inherent in the entrepreneurial team ideation process. Essay II provides valuable insights into the influence of post-founding factors within the venture context on a founder's cognition-based trust in the entrepreneurial team. Finally, by studying how entrepreneurial fatigue develops over time in Essay III, I build a dynamic model of the process through which founders may lose and recover their energy for working on the venture. Taken together, I hope this dissertation will encourage further much-needed research into the dynamic, micro-level aspects of entrepreneurial cognition and well-being in early-stage ventures.

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7 Appendix

7.1 Appendix Essay I: Towards a Compilation-Based Perspective of Entrepreneurial Team Ideation

7.1.1 Information Stimuli Cards Distributed within each Entrepreneurial Team

Participants were asked to: 1) identify 3-5 business ideas using the information stimuli, 2) select the most promising of these ideas, and 3) decide how to implement the chosen business idea.

Card 1	There are many entertainers in [Country X] who specialize in family celebrations and parties. They have hardly any opportunities to offer their services to a wide audience (outside of direct customer recommendations). Only very few entertainers work, for instance, with professional event and wedding planners.
Card 2	Young couples are increasingly interested in professionally capturing memories. In recent years, complex technology has been used to photograph and film weddings (e.g., films from a bird's eye view with the help of a quadcopter). Currently there are no suitable offers that provide such innovative documentation at a reasonable price.
Card 3	In [Country X], the average age at which single women get married is currently about 30 years. Men are about 33 years old when they arrive at the altar. In 2010, the Federal Statistical Office registered 380 thousand marriages. A steadily increasing number of marriages can be traced back to Internet contacts in platforms such as [Platform A] or [Platform B].
Card 4	A large proportion of [people in Country X] celebrate round-number birthdays and reaching the age of majority with a larger celebration. On average, they are willing to spend 40% of their monthly income. [Country X] achieved an annual GDP per capita of around €29 thousand in 2010. Despite a high willingness to pay, people celebrating find hardly any suitable venues. The supply is scarce and bookings for favored locations are often sold out well in advance. Suitable locations (e.g., lakeside properties, estates, castles) are actually abundant, however, they are rarely used for events.
Card 5	The potential business segments in the context of family celebrations and parties are highly fragmented. For example, people searching for offers and support for their party have hardly any opportunities to draw on the experiences of customers outside of their own friend circles.
Card 6	Around 80% of [people in Country X] are religious. The majority of these religious people celebrate large religious festivals such as confirmation, communion, baptism, bar mitzvah, festivals marking the end of fasting, etc. with large family events. According to a survey by [University Y], the organizers of such festivals invest an average of 180 private working hours per event for preparation (e.g., writing invitations, organizing the supporting program, and organizing accommodation for guests). If exotic props or foods are required for the festival, this number of hours increases by 40% since there are few supporting services available in [Country X].

Note: Some card details have been anonymized (denoted with square brackets).

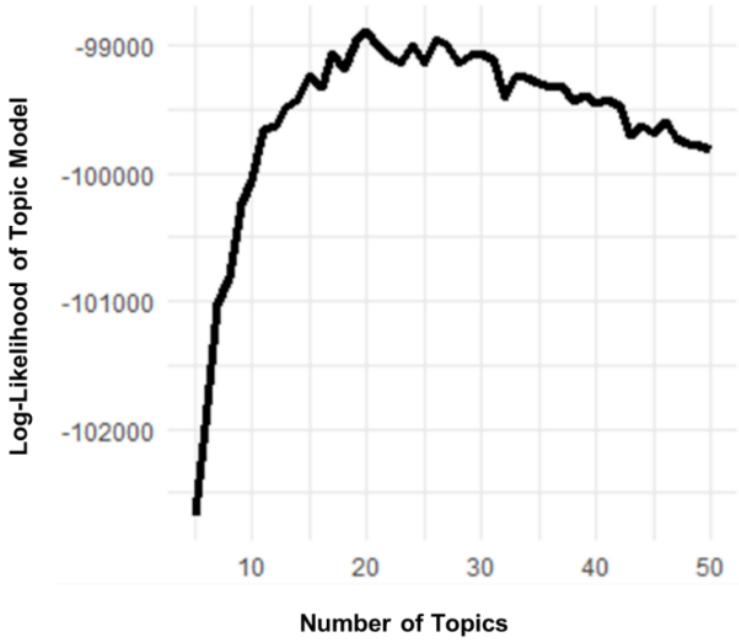
7.2 Appendix Essay II: Trust in Entrepreneurial Teams: The Role of Entrepreneurial Team Narratives

7.2.1 Interview Guide

Respondents were asked each of the following questions in a conversational format. When multiple questions are included, these were asked one by one with the respondent given the chance to answer each one in turn.

Q1	How did the team come together?
Q2	How are the company shares split amongst yourselves? How did this distribution come about?
Q3	What makes your team special? What are special characteristics?
Q4	Which issues or values are important to you in your team? Have you also talked about this in your team?
Q5	What would you like to try out in your team or change?
Q6	What are the roles of the founders (within the founding team)? Who is the CEO in your company? [If unclear, who the CEO is: who performs most of the strategic tasks?]
Q7	In which situations did you have to be flexible because of your team or make compromises?
Q8	Please think about a situation in which you and your team were very stressed. Now take me through the situation. What kind of situation was it? How did you deal with it as a team?
Q9	How do you deal with it, as a team, when one of your team members is feeling especially stressed? Can you give me an example?

7.2.2 Topic Optimization based on Log-Likelihood of Topic Models with Different Numbers of Topics



7.2.3 Worked Example of Derivation of Structural Dimensions of Team Narratives

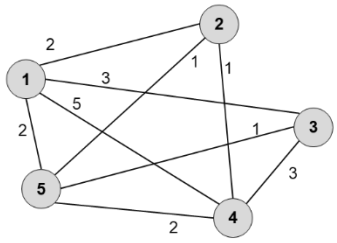
a) Narrative-Topic Matrix

$$D = \begin{array}{c} \\ \text{Team } a \\ \\ \\ \text{Team } b \\ \\ \text{Team } c \\ \\ \end{array} \begin{array}{c} \begin{array}{ccccc} \text{Topic} & & & & \\ 1 & 2 & 3 & 4 & 5 \end{array} \\ \begin{pmatrix} 1 & 0 & 0 & 1 & 0 \\ 1 & 0 & 1 & 1 & 0 \\ 1 & 0 & 1 & 1 & 1 \\ 0 & 0 & 0 & 1 & 1 \\ 1 & 1 & 0 & 1 & 0 \\ 1 & 0 & 1 & 1 & 0 \\ 1 & 1 & 0 & 0 & 1 \end{pmatrix} \end{array} \begin{array}{c} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \end{array}$$

b) Topic Co-Occurrence Matrix

$$D^c = \begin{array}{c} \begin{array}{ccccc} \text{Topic pair} \rightarrow & 1 & 2 & 3 & 4 & 5 \end{array} \\ \begin{array}{c} 1 \\ 2 \\ 3 \\ 4 \\ 5 \end{array} \begin{pmatrix} 0 & 2 & 3 & 5 & 2 \\ 2 & 0 & 0 & 1 & 1 \\ 3 & 0 & 0 & 3 & 1 \\ 5 & 1 & 3 & 0 & 2 \\ 2 & 1 & 1 & 2 & 0 \end{pmatrix} \end{array}$$

c) Topic Co-Occurrence Network



In order to show how the structural dimensions were calculated, we use the dichotomized narrative-topic matrix *D* as an example (pictured in box a) above). This matrix shows which topics feature in the team narratives of seven co-founders from three entrepreneurial teams, Team *a*, *b*, and *c*. The first three rows of represent the team narratives of Co-founder 1, 2, and 3, who are all part of Team *a*, the next two rows represent the team narratives of Co-founder 4 and 5, who form Team *b*, and the final two rows represent the team narratives of Co-founder 6 and 7 of Team *c*. Each element D_{ij} is 1 or 0 depending on whether topic *j* is featured in the team narrative of co-founder *i*. For instance, $D_{11} = 1$, so Topic 1 was included in Co-founder 1's team narrative, while $D_{41} = 0$, so Topic 1 was not included by Co-founder 4.

The structural dimension of the heterogeneity of narrative topics for Team *b* is measured by the Euclidean distance between the row vector of Co-founder 4, $(0 \quad 0 \quad 0 \quad 1 \quad 1)$, and the row vector of Co-founder 5, $(1 \quad 1 \quad 0 \quad 1 \quad 0)$, which is $\sqrt{(0-1)^2 + (0-1)^2 + (0-0)^2 + (1-1)^2 + (1-0)^2} = \sqrt{3} \approx 1.73$. Applying the same approach to Team *c* gives us a Euclidean distance of 2. For Team *a*, since there are more than 2 co-founders, we have to calculate the Euclidean distance for each co-founder pair within the team. Therefore, we calculate the Euclidean distance between the row vectors of Co-founder 1 and Co-founder 2 (1), as well as the distance between the row vectors of Co-founder 2 and Co-founder 3 (1), and also the distance between the row vectors of Co-founder 1 and Co-founder 3 ($\sqrt{2}$). Taking the average of these three distances gives us the average Euclidean distance for Team *a* (1.138). Rescaling the average Euclidean distance for all teams to be between 0 and 1 would yield relative heterogeneities in teams *a*, *b*, and *c* of 0, 0.69, and 1, respectively. Thus, co-founders in Team *c* process the team's social information most heterogeneously (compared to Team *a* and *b*).

To calculate the structural dimension of uniqueness of narrative topics in each team, we

first use the narrative topic co-occurrence matrix D^c (pictured in box b above), which can be visualized using a network as shown in box c above. The 5 nodes in the network represent Topics 1 through 5. Edges only connect two topics if they co-occur at least once; this is the case for all topic pairs except Topic 2 and 3. The numbers on the edges indicate their weight, which comes directly from the topic co-occurrence matrix. For instance, $D^c_{12} = 2$, so the edge connecting nodes 1 and 2 has a weight of 2. The weighted degree centrality of a topic is the sum of the weights of the edges connected to it. For example, the weighted degree centrality of Topic 1 is 2 + 3 + 5 + 2 = 12. Similarly, we can calculate the weighted degree centrality of Topics 2, 3, 4, and 5 to be 4, 7, 11, and 6, respectively. Topic 2 has the lowest weighted degree centrality (4) and is thus the most unique topic in this example. In the case of the teams from narrative-topic matrix *D*, the average weighted degree centralities for Team *a*, *b*, and *c*, are 9, 8.25, and 8, respectively. Rescaling these to be between 0 and 1 gives us 1 (Team *a*), 0.25 (Team *b*), and 0 (Team *c*) as the level of *lack* of uniqueness. Multiplying these values by -1 gives us -9 (Team *a*), -8.25 (Team *b*), and -8 (Team *c*) as the uniqueness. Thus, co-founders in Team *c* understand their team most uniquely compared to other teams in their environment (Team *a* and *b*).

7.2.4 Scales for Cognition-Based Trust and Perceived Resource Scarcity

a) Cognition-Based and Affect-Based Trust Scales Adapted from McAllister (1995)

Respondents were asked to indicate the extent to which they agreed with the following statements on a scale of 1 (not at all) to 7 (completely).	
Cognition-based trust	
Item 1	Our founding team approaches the work with professionalism and dedication.
Item 2	Given our founding team members' track record, I see no reason to doubt their competences and preparation for the work.
Item 3	I can rely on my founding team members not to make my job more difficult by careless work.
Item 4	Most people, even those who aren't close friends of my founding team members, trust and respect them.
Item 5	Other persons who interact with my founding team members at work consider them to be trustworthy.
Item 6	If people knew more about my founding team members and their backgrounds, they would be more concerned and monitor their performance more closely. [a]
Affect-based trust	
Item 1	In our founding team, we have a sharing relationship and can all freely share our ideas, feelings, and hopes.
Item 2	I can talk freely to my founding team members about difficulties I am having at work and know that they will want to listen.
Item 3	We would all feel a sense of loss if one member of our founding team had to leave the founding team and we could no longer work together.
Item 4	If I shared my problems with my founding team, I know they would respond constructively and caringly.
Item 5	I could say that in our founding team we have all made considerable emotional investments in our working relationship.

[a] Item was reverse-coded.

b) Perceived Resource Scarcity Scale Adapted from Faraj and Yan (2009)

Respondents were asked to indicate the extent to which the following statements applied to them on a scale of 1 (not at all) to 7 (a lot).	
Item 1	Since its start, the founding team has found it critical to preserve and stretch available resources to accomplish its tasks.
Item 2	Since its start, the founding team has had to carry out its tasks under serious resource constraints.
Item 3	Since its start, the founding team has experienced an ongoing need for additional resources to get its job done.

7.2.5 Robustness Tests

We tested different versions of the scale for perceived resource scarcity with censored regression models (Model 7-9) and ran the full model using OLS regression (Model 10). The results supported our hypotheses to a large extent, apart from Model 7, which relies only on Item 1 of the resource scarcity scale. Model 8, 9, and 10 had results consistent with all our hypotheses.

	Model 7			Model 8			Model 9			Model 10		
	Coeff.	Robust SE	p	Coeff.	Robust SE	p	Coeff.	Robust SE	p	Coeff.	Robust SE	p
Constant	2.84	1.07	0.009	1.32	0.91	0.153	1.80	0.78	0.024	1.34	1.00	0.183
Age	0.02	0.01	0.082	0.01	0.01	0.134	0.02	0.01	0.020	0.02	0.01	0.032
Gender [a]	0.01	0.18	0.950	0.00	0.18	0.988	0.05	0.17	0.781	0.03	0.15	0.836
Education	0.04	0.06	0.504	0.06	0.06	0.295	0.03	0.06	0.542	0.04	0.06	0.435
Founding experience	0.02	0.03	0.496	0.04	0.04	0.303	0.00	0.05	0.309	0.04	0.04	0.319
Prior relationship	0.01	0.05	0.887	−0.00	0.05	0.897	0.00	0.05	0.962	−0.00	0.05	0.966
Affect-based trust	0.68	0.07	0.000	0.69	0.07	0.000	0.66	0.07	0.000	0.60	0.07	0
Team size	−0.25	0.09	0.006	−0.25	0.09	0.007	−0.24	0.09	0.011	−0.20	0.08	0.024
Team age	−0.04	0.06	0.495	−0.05	0.05	0.359	−0.05	0.05	0.384	−0.03	0.05	0.535
Team educational diversity	0.06	0.16	0.703	0.13	0.15	0.379	0.07	0.14	0.614	0.05	0.13	0.696
Industry [b]	0.02	0.29	0.951	−0.23	0.31	0.456	0.02	0.29	0.942	−0.07	0.25	0.78
Heterogeneity of narrative topics in a team	−0.12	1.66	0.944	2.93	0.99	0.004	1.41	0.59	0.019	3.11	1.17	0.011
Uniqueness of narrative topics in a team	3.04	1.68	0.074	2.09	0.91	0.025	1.72	0.89	0.057	2.53	1.46	0.09
Perceived resource scarcity [c]	−0.14	0.17	0.384	0.09	0.09	0.331	0.05	0.09	0.564	0.16	0.13	0.222
Heterogeneity of narrative topics in team × Perceived resource scarcity	0.08	0.28	0.777	−0.45	0.17	0.008	−0.28	0.14	0.041	−0.55	0.22	0.016
Uniqueness of narrative topics in team × Perceived resource scarcity	−0.40	0.27	0.145	−0.30	0.10	0.004	−0.31	0.14	0.034	−0.40	0.22	0.069

Notes: N = 102; cluster-robust standard errors are in parentheses.
[a] 0 = male, 1 = female
[b] 0 = product-based firms, 1 = service-based firms
[c] Measured using only Item 1, Item 2, and Item 3 in Model 7, 8, and 9, respectively. Model 10 includes all items.

7.3 Appendix Essay III: Towards a Dynamic Model of Entrepreneurial Fatigue

7.3.1 Interview Guides

In all interview rounds, we asked additional follow-up questions, depending on each interviewee's answers. At the end of each interview, we invited founders to say anything that they felt important to add.

First interview:

Venture: First of all, I'm interested in what your company does exactly. Please tell me a bit about it. | How did you come up with your business idea? | What motivated you to become an entrepreneur? | How did the (founding) team come together? | How are the company shares split up amongst yourselves? How did this distribution come about? | What is the picture or image of your company that you want to create for important stakeholders [customers, investors]? How do you communicate this image? | What would you like others to think about your founding team [the people behind the company]? | What are your short- [5 months] and long-term [3-5 years] goals for the company? Do you think these goals are ambitious? What may be most likely to go wrong?

Founding team: What makes your team special? What are special characteristics? | Which issues or values are important to you in your team? Have you also talked about this in your team? | What would you like to try out in your team or change? | What are the roles of the founders? [Who is the CEO in your company?] | What task is most meaningful to you? | In which situations did you have to be flexible because of your team or make compromises? | Please think about a situation in which you and your team were very stressed. Take me through the situation: what kind of situation was it? How did you deal with it as a team? Did you talk to anyone outside the team about the challenge? | How do you deal with it, as a team, when one of your team members is feeling especially stressed? Can you give me an example?

Individual: In a startup, a lot of unexpected things can happen. How do you, personally, deal with this? Can you please give me an example? | We have already talked a lot about work-related topics, let's now talk about the time spent outside of work. What does "non-work time" mean to you? | What do you do to "switch off"? | Is there such a thing as free-time after work on working days for you or do you do something after work? | Are there any agreements in the team regarding overtime and vacation days? | Have you ever been on the verge of quitting and throwing everything away? [If yes: why? Why did you nevertheless decide to continue?] [If no: Is there nevertheless something that puts you personally under pressure while working in the company? How do you deal with it?] | Let's try a thought experiment: I will give you three different situations in which you should introduce yourself. Feel free to think back to a similar situation you experienced in the past. First, please imagine you are at a party. How would you introduce yourself here [to a guest you don't know]? What would you answer if someone were to ask you, what it is you do (in terms of your job)? In the second situation, please imagine that you are giving a talk as a guest speaker at a university. How would you introduce yourself here? And the third and last situation is when you meet a potential investor for the first time. How would you introduce yourself? | Steve Jobs once said that it is important to always be hungry (for more). What do you think about this? Would you say this applies to you? What is it that you are hungry for in your company? | Please describe the best, most memorable moment for you since (operationally) founding. How did you feel in that situation? How did your team members react in that situation?

Second interview:

Developments since last interview: What has happened in the months since our interview on [date of interview 1] at your company? | What successful experiences did your company have? | What challenges did your company have? | Have there been any changes in the founding team since then? How did these changes come about? What impact do you think these changes will have on how the team works together? And what impact on the company? | Did the changes since our last interview influence your company goals? | Could you please tell me what your most important goals are at the moment for the company? | Are you currently looking for new sources of financing? What sources are you considering? What steps are you taking to secure funding?

Venture: Could you please tell me how you came up with the company name? How does the company name reflect who you are? How do others typically react to it? | And how did you come up with the company logo? How does the logo reflect who you are? How do others typically react to it? | To which industry do you feel your company belongs? | Which industry is most important for company? | Who are your competitors? How are you different from your competitors? [If only positive: What do your competitors do better than you?] | For you personally, is there anyone you compare yourself to (e.g., a role model)? Are there certain aspects of this person that you would also like to have? Is there a cautionary example (e.g., I do not want to be like such and such.)? | Please think about your entrepreneurial journey until today. Imagine that on this journey you would have had infinitely many resources available for your company. In what ways would this journey have been different?

Team: How would you describe your current relationship with your co-founders? | [If friends: Do you have the feeling that your friendship has an influence on how you discuss ideas in the team? Were there moments in which your friendship was a hindrance?] | [If not friends: What would be different, if you were friends?] | How do you make decisions in the team, especially if you don't all agree? Can you give me an example? | How did this decision making process come about? [If unclear: Who has the final say? Does it depend on the topic?] | How many employees report directly to you? How would you describe your current relationship with your employees? [If no employees: How should your relationship look like?] What is [would be] important to you in working together? | What do you delegate to your employees? / What would you delegate first to your employees? | Would you say you are passionate about your company? | How is [would] it [be] like for you to hand over your "baby" to your employees? | How do you motivate your employees?

Future-oriented individual level: Have you already thought about exit options? And if yes, which ones? [Ask about both exit in terms of selling the company and quitting.] | What would have to happen for you to leave the company? How would your founding team react? | Have you already spoken to your co-founders about exit options? What did you talk about/why haven't you talked about this? | What would change in your company if only you were to exit? | What would you most like to read about your company in the newspaper in 10 years? | What would you most like to read about yourself in the newspaper in 10 years?

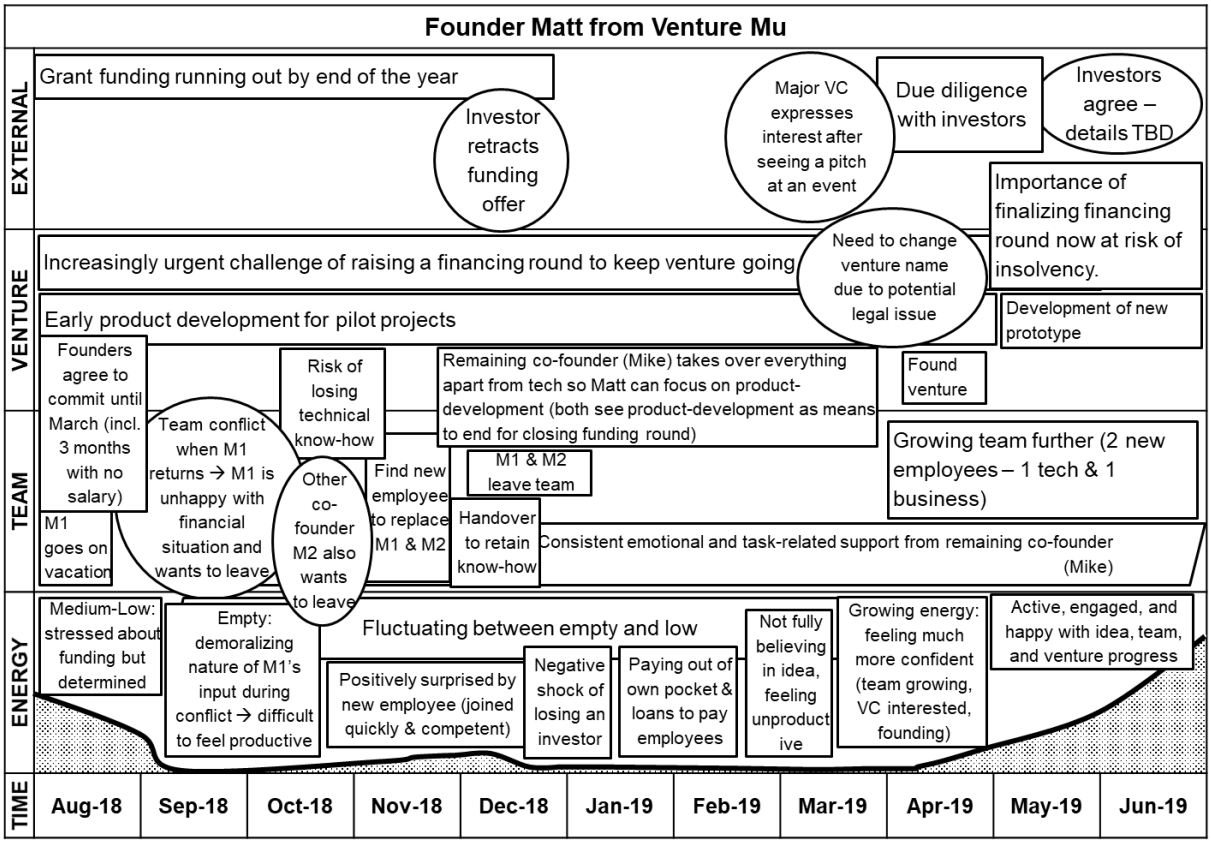
Third interview (only conducted with founders who experienced entrepreneurial fatigue):

Developments since last interview: What has happened in the months since our interview on [date of interview 1] at your company? Were there any highs or lows that were especially important for you personally? | In our last interviews, you mentioned that there were times when you had very little energy for working on the venture and it was difficult to continue, e.g., when [adapt event to person] happened. How do you feel now? | Do you in the meantime have more energy, the same energy, or less energy for the company? What would you say are the main reasons for this? [If same/less: did you come close to quitting? How did your co-founders react?] [If more: what helped you? Do you feel as much energy for the company as you felt at the start?]

Energy cycles: Do you have the feeling that your energy for the company is sometimes higher sometimes lower over time, i.e., does it move in cycles? | Overall, would you say that your energy has rather risen or fallen with time? And what would you say are the main reasons for that? Does it partly depend on your team? | Is it sometimes harder or easier to recharge your energy? Do your co-founders contribute to it being harder or easier or is it more of an individual thing? Can you give an example? | How do you manage to continue in the most difficult times when your energy is extremely low? Do you speak with your co-founders about it?

Energy gas tank car metaphor: As you may perhaps have noticed from the questions so far, in my research I am especially interested in how founders exhaust their energy for the venture and then recharge - basically, how you use up the fuel in your car and then fill it up again. How does that play out for you? | When do you think it is time to fill up the tank? How do you do this? | What makes you step on the gas? | Was there ever a time in which you had the energy but just didn't feel like putting it into the venture? What kind of a situation was this? | Do you think your gas tank has a fixed size or can it become bigger or smaller? Why? Can you give an example?

7.3.2 Timeline Excerpt for Founder Matt from Venture Mu



8 Contribution to Essays

Essay 1 (Chapter 2)

I developed the essay's research questions and research design under the supervision of my co-authors.

The dataset for this essay was collected by my co-authors, together with Daniel Schmelzer and Matthias Ballweg.

I was responsible for the data analysis, which I carried out over the course of an iterative process that incorporated feedback from my co-authors.

The essay itself was written by me based on my discussions with my co-authors and their comments on various iterations of the manuscript.

Name of lead author:

Aishwarya Kakatkar

Name of co-author 1:

Holger Patzelt

Name of co-author 2:

Nicola Breugst

Essay 2 (Chapter 3)

I developed the essay's research question and research design under the supervision of my co-authors.

The dataset for this essay was collected by my co-authors and I, together with Carolin Feldmeier, Max Haase, and Friedrich Tacke.

I was responsible for the data analysis, which I carried out based on feedback from my co-authors.

The essay itself was written by me based on my discussions with my co-authors and their comments on various iterations of the manuscript.

Name of lead author:

Aishwarya Kakatkar

Name of co-author 1:

Holger Patzelt

Name of co-author 2:

Nicola Breugst

Essay 3 (Chapter 4)

I developed the essay's research questions and research design under the supervision of my co-authors.

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I was responsible for the data analysis, which I carried out over the course of an iterative process that incorporated feedback from my co-authors.

The essay itself was written by me based on my discussions with my co-authors and their comments on various iterations of the manuscript.

Name of lead author:

Aishwarya Kakatkar

Name of co-author 1:

Holger Patzelt

Name of co-author 2:

Nicola Breugst