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Chair of Entrepreneurship

The Entrepreneurial Team Journey:
Collectively Exploring the Venture's Future

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List of abbreviations

BCERC	Babson College Entrepreneurship Research Conference
cf.	Confer
CEO	Chief executive officer
CFI	Comparative fit index
CFO	Chief financial officer
Dr.	Doctor
e.g.	Exempli gratia (for example)
Et al.	Et alii (and others)
ERI	Entrepreneurship Research Institute
i.e.	Id est (that is)
IMO	Input-mediator-output
IPO	Initial public offering
M	Mean
n.a.	Not applicable
OKR	Objectives and key results
Prof.	Professor
SD	Standard deviation
SE	Standard error
SRMR	Standardized root mean square residual
TMT	Top management team
TUM	Technical University of Munich
USD	United states dollar
VIF	Variance inflation factor
vs	versus

Abstract

This dissertation presents three essays that examine how entrepreneurial teams collectively explore their ventures' future. Using different research approaches, the dissertation examines entrepreneurial visions, entrepreneurial opportunities, information elaboration and decision-making, and it develops a roadmap for future research on entrepreneurial teams. The dissertation contributes to the entrepreneurship and management literatures.

Zusammenfassung

Diese Dissertation befasst sich mit Gründerteams und wie sie gemeinsam die Zukunft ihrer Unternehmen gestalten. Basierend auf drei unterschiedlichen methodischen Herangehensweisen untersucht die Dissertation unternehmerische Visionen, unternehmerische Opportunitäten, Informationsaustausch und Entscheidungsfindung, und entwickelt umfassende Ideen für zukünftige Forschung zu Gründerteams. Die Dissertation leistet einen Beitrag zur Forschung zum Unternehmertum und zur allgemeinen Management-Literatur.

1 Introduction

1.1 Conceptual background

Entrepreneurial teams shape the future and performance of their newly founded ventures (Eisenhardt, 2013; Klotz, Hmieleski, Bradley, & Busenitz, 2014). When developing these ventures, working on the opportunities that the ventures pursue is most important (Davidsson, 2015). Consequently, entrepreneurship research studies how entrepreneurial opportunities are discovered, evaluated, and exploited (Shane & Venkataraman, 2000; Venkataraman, 1997). The conceptual domain of entrepreneurship research includes “the constructs of opportunities, individuals and teams, and mode of organizing within the context of wider environments” (Busenitz et al., 2003, p. 296) in a dynamic process (Busenitz et al., 2003; McMullen & Dimov, 2013). Studying all these topics along a dynamic process makes the field of entrepreneurship a highly complex, but also a highly interesting research field.

Traditionally, entrepreneurship research has implied that a new venture is founded by a ‘lone hero,’ i.e., a solo entrepreneur leading and developing his or her venture (Klotz et al., 2014). However, nowadays most new ventures are founded by an entrepreneurial team rather than individuals (Kamm, Shuman, Seeger, & Nurick, 1990; Klotz et al., 2014). For example, Wasserman (2012) reports that in his sample only 17.5% of technology and 11.7% of life sciences ventures were founded by solo entrepreneurs. Entrepreneurial teams are formed by “two or more individuals who have a significant financial interest” (Cooney, 2005, p. 229) and strive towards “a common goal that can only be achieved by appropriate combinations of individual entrepreneurial actions” (Harper, 2008, p. 614). Since they are “chiefly responsible for the strategic decision making and ongoing operations of a new venture” (Klotz et al, 2014, p. 227), the team members’ characteristics and team heterogeneity are likely to influence organizational outcomes, consistent with an upper echelons perspective (Carpenter, Geletkanycz, & Sanders, 2004; Jin et al., 2017). Importantly, entrepreneurial teams will collectively develop the opportunity over time in a social process (Dimov, 2007).

To date, research on entrepreneurial teams has mainly taken an upper echelon perspective focusing on team members’ characteristics and their impact on venture performance (Jin et al., 2017; Klotz et al., 2014). In line with the broader management literature studying top management teams (Carpenter et al., 2004), this stream of research has focused on a range of

demographic and ‘observable’ factors (Jin et al., 2017; Klotz et al., 2014). Besides the focus on the entrepreneurial team’s initial composition, entrepreneurship scholars have studied how entrepreneurial team members work together. First, as summarized by a recent literature review (De Mol, Khapova, & Elfring, 2015), entrepreneurship scholars have extensively studied a broad range of constructs capturing the entrepreneurial team’s cognition and its effect on team-work and venture outcomes. Second, previous research has studied processes such as team conflict (e.g., Ensley & Pearce, 2001; Ensley, Pearson, & Amason, 2002) or decision making (e.g., Souitaris & Maestro, 2010; Vanaelst et al., 2006). Finally, some studies have explored antecedents and consequences of membership changes within the entrepreneurial teams (e.g., Guenther, Oertel, & Walgenbach, 2016; Ucbasaran, Lockett, Wright, & Westhead, 2003).

Contributing to this stream of research, this dissertation addresses three so far poorly understood, yet centrally important aspects along this entrepreneurial team’s journey. First, entrepreneurs are often depicted as visionary individuals who guide their organizations into the future based on these visions (Bird, 1988). Prior work has mainly taken a leadership perspective highlighting potential consequences of (not) having a shared organizational vision (Baum & Locke, 2004; Baum, Locke, & Kirkpatrick, 1998; Ensley, Pearson, & Pearce, 2003; Pearce & Ensley, 2004). However, since founders have “the freedom to pursue their own goals, dreams, and desires in new firm creation” (Fauchart & Gruber, 2011, p. 935), focusing on organizational visions only and not capturing any personal vision elements of the team’s members seems insufficient to explain how entrepreneurial teams develop their ventures towards the achievement of their desired future. Further, taking an upper echelon perspective (Hambrick & Mason, 1984), it remains unclear how these personal vision elements, which are less observable and more complex indicators of the entrepreneurial team’s heterogeneity, impact team processes and opportunity development over time.

Second, while entrepreneurial teams have to make many decisions over time, selecting the opportunity to pursue is one of the most central decisions for their future (Gruber, MacMillan, & Thompson, 2008). While being highly important, this decision is also challenging due to (i) the opportunity related uncertainty (Hmieleski & Ensley, 2007), (ii) the plethora of information to be processed (Zheng, 2012), and (iii) the early time point in the entrepreneurial team journey at which the decision has to be made and at which the team did not have the chance to develop shared mental models (DeChurch & Mesmer-Magnus, 2010). Because of a lack of experience, this decision seems especially challenging for novice entrepreneurial teams. However, research

on opportunity decisions so far has focused on the individual level of analysis (Shepherd, Williams, & Patzelt, 2015) rather than investigating how entrepreneurial teams make the decision which opportunity to pursue.

Third, entrepreneurship research has started to break away from “popular legends about individual entrepreneurs” (Ensley et al., 2002, p. 365) towards acknowledging the importance of entrepreneurial teams in the entrepreneurial journey (De Mol et al., 2015; Jin et al., 2017; Klotz et al., 2014). However, we still do not sufficiently understand their emergence, their functioning, and their dissolution and how their development shapes the entrepreneurial venture. While previous reviews on entrepreneurial teams have taken a rather static input-mediator-output perspective (De Mol et al., 2015; Klotz et al., 2014), we lack a comprehensive review examining extant research along the entrepreneurial journey, taking into account dynamic aspects of team processes (Marks, Mathieu, & Zaccaro, 2001) as well as cognitive and affective emergent states (Cardon, Post, & Forster, 2017; De Mol et al., 2015) over time.

Based on three essays on entrepreneurial teams’ journeys, this dissertation not only contributes to the literature on entrepreneurial teams, but also informs the literature on management and work teams more broadly. Finally, this dissertation offers practical implications for entrepreneurial team members and those working with and investing into entrepreneurial ventures.

1.2 Research problems and objectives

Each of this thesis’ three essays sheds light on future-related aspects related of the entrepreneurial team and its venture.

In the first essay (Chapter 2), I¹ study how heterogeneity in terms of the entrepreneurial team members’ envisioned futures shapes the team’s opportunity development over time. Since previous research on entrepreneurial teams (Jin et al., 2017; Klotz et al., 2014) taking an upper echelon perspective (Hambrick & Mason, 1984) has focused on observable characteristics related to the team members’ past (e.g., experience, prior company affiliation, education) or presence (e.g., functions, social capital, skills), we lack insights into less observable and future oriented types of heterogeneity and their implications. Also, previous research on visions in the entrepreneurship context (Baum & Locke, 2004; Baum et al., 1998) has focused on venture

¹For ease of reading of this dissertation, “I” is used consistently. However, essays I and II were developed with co-authors as I outline in Chapter 1.4

related aspects neglecting the entrepreneur's personal needs (Ruvio, Rosenblatt, & Hertz-Lazarowitz, 2010). Finally, we know rather little about the factors triggering heterogeneity among team members' entrepreneurial visions and how this heterogeneity in turn affects entrepreneurial outcomes. Thus, the research question in my first essay is: *How do the entrepreneurial visions held by members of founding teams impact the future development of the opportunities their ventures pursue?* By studying team members' entrepreneurial visions, their emergence, (in)congruence, and consequences I seek to advance our understanding of entrepreneurial visions, upper echelons in the entrepreneurial context (Jin et al., 2017; Klotz et al., 2014), and opportunity development in a social environment (Dimov, 2007).

In the second essay (Chapter 3), I zoom in on a specific task related team process (Marks et al., 2001), namely the entrepreneurial team's information elaboration and decision making. While previous research has highlighted that information processing is contingent on the task environment (Gardner, Staats, & Gino, 2012; Resick, Murase, Randall, & DeChurch, 2014), little is known about the effect of information properties (Sohrab, Waller, & Kaplan, 2015). In the early phase of the entrepreneurial journey many decisions need to be made, but an especially important one is the selection of the opportunity to pursue (Gruber et al., 2008) and to be developed collectively (Dimov, 2007). For novice entrepreneurial teams in particular this is a challenging task due to the inherent uncertainty (Hmieleski & Ensley, 2007), diverse information held among team members (Fern, Cardinal, & O'Neill, 2012), the complexity of information processing (Zheng, 2012), and their lack of joint past experiences preventing the development of shared mental models (DeChurch & Mesmer-Magnus, 2010). Thus, so far, we lack insights into the interplay between information elaboration, information reliability, and team reflection in explaining team decision quality. More specifically, this essay studies: *To what extent do information reliability and team reflection impact the relationship between information elaboration and team decision quality?*

In the third essay (Chapter 4) I develop an *agenda for future research on entrepreneurial teams along their lifecycles*. Research on entrepreneurial teams significantly lacks behind research on individual entrepreneurs. For example, at the individual level entrepreneurial passion has been studied extensively, while there is no empirical work on the team level so far (Cardon, Post, et al., 2017). Further, as previous reviews on entrepreneurial teams have illustrated, the majority of studies has taken an upper echelon perspective focusing on the team's observable and past or present-oriented characteristics (De Mol et al., 2015; Klotz et al., 2014), rather than aspects

which become more relevant over time. For example, the exit of an entrepreneurial team member is surprisingly understudied despite the important and frequent nature of the phenomenon and its potentially substantial theoretical implications (Guenther et al., 2016). Thus, research on entrepreneurial teams seems to follow research on management teams in general (e.g., by showing the strong focus on the upper echelon perspective and using the same type of constructs; Jin et al., 2017). While previous reviews have taken an input-mediator-output perspective (Klotz et al., 2014) to systematize existing literature, I choose a different approach by focusing on the entrepreneurial team's journey from the very beginning to the entrepreneurial team's dissolution. This novel approach allows me to summarize extant literature on entrepreneurial teams, identify novel under-researched areas, and highlight dynamic and interdependent elements over the team's lifecycle.

1.3 Data sets and methodological approaches

To answer my research questions, I use three different methodological approaches in my dissertation. Methodological approaches are chosen considering the state of the theory and the nature of the specific research questions (Edmondson & McManus, 2007). First, I conduct an inductive qualitative multiple-case study for the essay on entrepreneurial visions (Chapter 2). Second, based on a deductive study relying on an experimental design, I identify contingencies of the relationship between information elaboration and team decision quality (Chapter 3), and third, I conduct a systematic literature review to define a future research agenda (Chapter 4).

In the first essay, I employ a qualitative multiple case study approach (Eisenhardt, 1989a; Yin, 2009) due to the limited insights and theoretical precedent on how less observable and future-related types of heterogeneity, such as team members' visions, impact team decision making and organizational outcomes. This study relies on rich longitudinal data (in total >30 months) from two rounds of individual interviews with each founding team member, video-tapes of team meetings, and a broad range of triangulation material (e.g., field notes, press releases, social media posts, websites). Data collection covers 64 complete entrepreneurial teams, i.e., interviews were conducted with each entrepreneurial team member individually, instead of using a key informant approach (e.g., Ensley, Hmieleski, & Pearce, 2006). For theory building, I follow a theoretical sampling approach (Miles & Huberman, 1994) relying on information rich cases (Patton, 2002) which seem likely to extend theory (Eisenhardt, 1989a). I build my theory using eight cases, which is a typical number for multiple case study research (Eisenhardt,

1989a). To challenge the theorizing, I reassess additional 40 cases, but cannot find contradicting or new evidence altering the theorizing. Thus, I reach theoretical saturation with eight cases. To analyze the data, I follow an inductive approach (Corbin & Strauss, 2008) and code the data with the software NVivo.

In the second essay, I use a deductive study and draw on an experimental design to understand to what extent information reliability and team reflection impact the relationship between information elaboration and team decision quality. To answer this question, the study employs a hidden profile task, i.e., tasks in which the team's decision quality depends on the exchange of the team members' uniquely possessed information (Hoever, van Knippenberg, van Ginkel, & Barkema, 2012; Schulz-Hardt, Brodbeck, Mojzisch, Kerschreiter, & Frey, 2006; van Ginkel & van Knippenberg, 2008) and manipulates information reliability (high versus low). Teams need to decide on the optimal business opportunity (out of several alternatives), which represents a typical task for new entrepreneurial teams (Gruber et al., 2008). Participants are recruited in business and economics lectures, and randomly assigned to three-person teams. The final sample consists of 52 three-person team (26 in each condition). Besides common information items, each team member receives unique information items which are crucial to find the optimal opportunity. Participants fill out pre-and post-experiment questionnaires. Team sessions are videotaped and the video data coded. Important codes include information elaboration and team reflection. Further, team decision quality is conceptualized as the team identifying the optimal opportunity or not. To test the hypotheses, hierarchical logistic regression is used.

In the third essay, I systematically review the existing literature on entrepreneurial teams to derive a future research agenda. In line with recommendations on writing literature reviews (Short, 2009), I perform a comprehensive and systematic review starting with the year 2008 in which Harper (2008) published his seminal article on entrepreneurial teams. Based on clearly defined search terms and boundaries, I systematically search in databases and extensively perform a forward-and-backward-search of reference lists in articles on entrepreneurial teams. In total, my search reveals 81 articles in line with the set criteria and boundary conditions. To assess the state of the literature and identify promising avenues for future research, I take a lifecycle perspective on the entrepreneurial team when coding the articles. In contrast to the previously applied input-mediator-output framework (Klotz et al., 2014), this lifecycle perspective accounts for the entrepreneurial team's development stages, namely formation, collaboration, and dissolution and thus allows for understanding processual and dynamic aspects.

I code all articles according to their lifecycle stage and a broad set of other dimensions (e.g., sample, data collection, key definitions, variables measured, key findings). I systematize the state of existing knowledge along the entrepreneurial team's lifecycle and develop a comprehensive research agenda for each lifecycle stage and overarching and dynamic aspects.

1.4 Dissertation structure and overview

This dissertation is organized around the three essays as outlined above and summarized in Table 1 below. First, the essay on the conceptualization, emergence and consequences of entrepreneurial visions in founding teams is presented (Chapter 2). Next, the experimental study on the novice entrepreneurial team's decision making to select an entrepreneurial opportunity follows (Chapter 3). Building on a comprehensive literature review (including the preceding essays), the third essay systematizes the extant studies on entrepreneurial teams and develops a future research agenda along the entrepreneurial team's lifecycle (Chapter 4). Finally, I conclude this dissertation by discussing the overall theoretical and practical implications, limitations, and opportunities for future research

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

<i>Essay</i>	<i>Research Question(s)</i>	<i>Research Approach</i>	<i>Status & Reference</i>
Essay I			
Entrepreneurial Visions in Founding Teams: Conceptualization, Emergence, and Effects on Opportunity Development (Chapter 2)	How do the entrepreneurial visions held by members of founding teams impact the future development of the opportunities their ventures pursue?	Inductive; longitudinal multiple-case study approach	Accepted by the Journal of Business Venturing : November 28, 2018 First published online: December 21, 2018 Preller, R., Patzelt, H., & Breugst, N. (2018). Entrepreneurial visions in founding teams: Conceptualization, emergence, and effects on opportunity development. <i>Journal of Business Venturing</i> . doi:10.1016/j.jbusvent.2018.11.004 Previous versions were published in the <i>Frontiers of Entrepreneurship Research</i> (BCERC; 2015) and the <i>Academy of Management Meeting Proceedings</i> (2016)
Essay II			
Information Reliability and Team Reflection as Contingencies of the Relationship between Information Elaboration and Team Decision Quality (Chapter 3)	To what extent do information reliability and team reflection impact the relationship between information elaboration and team decision quality?	Deductive; experimental design	Accepted by the Journal of Organizational Behavior : May 3, 2018 First published online: May 29, 2018 Breugst, N., Preller, R. , Patzelt, H., & Shepherd, D. A. (2018). Information reliability and team reflection as contingencies of the relationship between information elaboration and team decision quality. <i>Journal of Organizational Behavior</i> , 39(10), 1314-1329. doi:10.1002/job.2298
Essay III			
From Dating to Happily Ever After. . . or Divorce: A Future Research Agenda on Entrepreneurial Teams Taking a Lifecycle Perspective (Chapter 4)	What do we know about entrepreneurial teams along their lifecycle? How can we advance the field in the future by taking a lifecycle perspective?	Systematic literature review	In preparation for submission in 2019

2 Essay I: Entrepreneurial Visions in Founding Teams: Conceptualization, Emergence, and Effects on Opportunity Development²

Prior research on entrepreneurial visions has typically taken a leadership perspective and explored how the founders' future images of their ventures motivate themselves and followers. Drawing on an upper echelon perspective and longitudinal case studies of eight founding teams, this study finds that founders' entrepreneurial visions do not only capture the future images of their ventures, but also the future images of the founders' relationship with it. Taking into account this personal aspect of visions, we show that within a founding team, the members' visions can be incongruent, i.e., they cannot be realized simultaneously within the current venture. While our data reveal that vision incongruence tends to occur when all team members perceive to have an equal status, vision congruence emerges when the attributed status in the team is heterogeneous. Founding teams with more congruent visions tend to follow a focused opportunity development path, while those with less congruent visions tend to follow a comprehensive opportunity development path. Depending on the teams' behaviors in the face of challenging situations either path can lead to successful opportunity commercialization or failure. We discuss the implications of these findings for the literatures on entrepreneurial visions, opportunities, and upper echelons.

2.1 Executive summary

Having a clear vision about their venture's future can provide founders with a roadmap for developing their firm under the uncertainty characterizing entrepreneurial environments. Prior entrepreneurship research has mainly taken a leadership perspective and studied the motivational and inspirational effects of communicating the founders' visions to followers. However, this perspective is likely to insufficiently capture visions from the founder's personal perspective. Specifically, founders' preferences and needs may influence their entrepreneurial vision despite not being communicated to others. For example, while a founder might envision personal wealth from a new venture, he or she may decide not to communicate this element of the

² Accepted for publication and published online December 21, 2018: **Preller, R., Patzelt, H., & Breugst, N.** (2018). Entrepreneurial visions in founding teams: Conceptualization, emergence, and effects on opportunity development. *Journal of Business Venturing*. doi:10.1016/j.jbusvent.2018.11.004

entrepreneurial vision to followers since he or she feels it would be neither motivational nor inspiring to them.

Moreover, while research taking a leadership perspective assumes that there is one vision for the venture defined by the lead entrepreneur or jointly developed by the founding team, members of the founding team could also hold different entrepreneurial visions based on their personal preferences. If these differences result in incongruent visions that are incompatible and cannot be realized within the current venture simultaneously, the founding team is likely to work together and develop the venture in a different way than a team whose members hold congruent visions. Although an upper echelon perspective suggests that founding team heterogeneity has important implications for firm development, we do not yet understand how heterogeneity in entrepreneurial visions based on team members' personal and future-related views shapes the development of a new venture.

To build theory on how team members' entrepreneurial visions trigger new venture development, we rely on longitudinal case studies of eight founding teams. Taking a focus on vision content rather than a leadership perspective, our study reveals that founders' entrepreneurial visions go beyond the founders' future image of their venture; the founders' visions also include the future image of their personal relationship with the venture. We further show that entrepreneurial vision congruence is more likely within a founding team when one team member is attributed higher status by the other team members.

Our study also illustrates how entrepreneurial visions within a founding team shape the nature of a new venture's opportunity development. Specifically, we find that if all members hold congruent visions, the team tends to follow a *focused opportunity-development path* characterized by opportunity changes that are infrequent and do not alter the opportunity's fundamental nature. In contrast, if team members hold incongruent visions, they tend to pursue a *comprehensive opportunity-development path* characterized by frequent and fundamental changes of the opportunity's core aspects. Importantly, neither path seems to be superior per se: depending on the founding team's specific behavior in the face of upcoming challenges either path can lead to successful opportunity commercialization or opportunity (and venture) failure.

Our study offers novel insights into the nature of entrepreneurial visions, their role as a type of founding team heterogeneity, and how they shape new ventures. First, we offer a novel conceptualization of entrepreneurial visions that includes the founder's personal perspective. In contrast to extant literature, we highlight that an entrepreneurial vision captures not only the

founder's future image of the venture but also the future image of his or her relationship with the venture. Second, we introduce entrepreneurial vision (in)congruence as a new type of team-level heterogeneity which has key implications for founding teams' opportunity development. We show that even teams whose members hold incongruent (and thus incompatible) visions can develop opportunities successfully to market when they approach challenging decision situations with high levels of professionalism. Finally, while prior research typically has emphasized that teams can differ with regard to their past (e.g., experiences) and present (e.g., skills), our study reveals how heterogeneity in terms of the team members' views on the future matters. We illustrate how vision incongruence can be non-observable among team members themselves, but nevertheless have significant implications for the team's opportunity development.

2.2 Introduction

Founders are often described as visionary individuals who “use images to guide their organizations into the future, toward ideals and situations that do not yet exist” (Bird, 1988, p. 446). In contrast to organizational goals which are specific and measurable objectives for the venture's near future (Berson, Halevy, Shamir, & Erez, 2015), an entrepreneurial vision is a “future-oriented image of the new venture, intended to motivate both the entrepreneurs and their followers (investors, future employees) toward this desirable future” (Ruvio et al., 2010, p. 145). Indeed, studies have highlighted that new venture visions increase stakeholder commitment (Bird & Jelinek, 1988; Gupta, MacMillan, & Surie, 2004), enhance follower motivation (Leung, Zhang, Wong, & Foo, 2006), and improve venture growth and performance (e.g., Barringer, Jones, & Neubaum, 2005; Baum & Locke, 2004). However, this research also suggests that if a venture's vision is insufficiently shared among founding team members, the likelihood of conflict, low team cohesion, unsuccessful product introductions, and low venture performance increases (Ensley et al., 2003; Pearce & Ensley, 2004).

While a leadership perspective on entrepreneurial vision emphasizes that founders formulate organizational visions for their ventures that they communicate to others to gain their support, there is good reason to believe that this communicated vision does not necessarily reflect founders' personal entrepreneurial visions. Since founders have “the freedom to pursue their own goals, dreams, and desires in new firm creation” (Fauchart & Gruber, 2011, p. 935), their entrepreneurial visions may emphasize the engagement in multiple ventures (consistent with a

passion for founding new firms; Cardon, Wincent, Singh, & Drnovsek, 2009) or the generation of personal wealth via a financial harvest exit (DeTienne, McKelvie, & Chandler, 2015). These images of a future do not capture or may even be detrimental to the interests of founding teammates, employees, investors, and other stakeholders. While founders tend to communicate mainly those aspects of their vision to stakeholders that help them acquire the resources they need (Zott & Huy, 2007), their key strategic decisions about the venture's future are also likely to be shaped by personally relevant, but not communicated elements of their entrepreneurial vision. To date, we do not have adequate theory that describes the nature of founders' entrepreneurial visions from a personal perspective and the ways these visions affect their ventures' development.

Understanding entrepreneurial visions from a personal perspective rather than a leadership perspective has important implications for founders' decisions, founding teams' processes, and new venture development. Taking such a perspective is critical not only because personal visions are highly impactful for individual motivation (Taylor, Pham, Rivkin, & Armor, 1998) but also because within a founding team, there might be considerable heterogeneity between members' desired futures that is not necessarily captured by the organizational vision outlining the venture's future. Upper echelons research suggests that heterogeneous motivations in top management teams can have substantial effects on strategic decision making and, in turn, firm-level outcomes (Steinbach, Holcomb, Holmes, Devers, & Cannella, 2017). This impact is particularly strong in contexts of high managerial discretion and high job demands (Hambrick, Finkelstein, & Mooney, 2005), typical conditions in new ventures (Forbes, 2005). Therefore, the study of personal entrepreneurial visions in a founding team context may provide substantial new insights into the roles of individuals and teams in new venture development. Specifically, given that the key strategic task of founding teams is to develop new entrepreneurial opportunities to market (Gruber, MacMillan, & Thompson, 2013), the following research question guides our study: *How do the entrepreneurial visions held by members of founding teams impact the future development of the opportunities their ventures pursue?* Specifically, we explore how each founding team member's entrepreneurial vision influences the level of vision congruence among team members (i.e., the extent to which their visions are compatible), and how vision (in)congruence influences their opportunity development. To do so, we draw on an upper echelons perspective and a longitudinal inductive study of eight founding teams to provide various novel insights.

First, based on rich qualitative data and the analysis of vision content, we offer a novel conceptualization of entrepreneurial vision at the individual level that includes not only the founder's future image of the venture but also the future image of his or her relationship with the venture. We illustrate the importance of this personal dimension for understanding how entrepreneurial visions affect important strategic decisions and the development of new ventures. In contrast to the prevalent leadership perspective of visions that emphasizes the importance of communicating a venture's vision to attract and maintain stakeholder support (Baum et al., 1998; Ruvio et al., 2010), we find that founders keep some future images of their relationships with the ventures to themselves because they may not be in the interest of (some) stakeholders.

Second, building on our content-centered approach to entrepreneurial vision at the individual level, we introduce entrepreneurial vision (in)congruence as a new type of team-level heterogeneity which has key implications for founding teams' strategic decision making regarding the opportunities they develop. Although prior work has argued that founding team members' shared vision for their venture is positively related to venture success (Kroll, Walters, & Le, 2007), we illustrate that even teams whose members permanently hold incongruent (and thus incompatible) visions can successfully develop opportunities to market when they approach challenging decision situations with high levels of professionalism.

Finally, prior research on entrepreneurial teams (Busenitz, Plummer, Klotz, Shahzad, & Rhoads, 2014; Jin et al., 2017) and upper echelons more generally (Bromiley & Rau, 2016; Carpenter et al., 2004) has focused on studying how heterogeneity based on demographic characteristics describing team members' past (e.g., founding experience, prior company affiliation, education) and present (e.g., functions, social capital, skills) impacts team outcomes (e.g., cohesion, Bjornali, Knockaert, & Erikson, 2016; performance, Wei & Wu, 2013). Taking a different approach and drawing on rich data, our study highlights the potential of studying vision congruence as a less observable type of heterogeneity based on team members' desired future for their venture including their personal future relationship with the venture. Indeed, our study illustrates how vision incongruence can be non-observable among team members themselves. Yet, it is this hard-to-observe type of heterogeneity that has significant implications for the team's opportunity development.

2.3 Theoretical background

2.3.1 Upper echelons perspective

To understand how management teams impact firm development, research has often relied on upper echelons theory (Hambrick & Mason, 1984) which proposes that “executives’ experiences, values, and personalities greatly influence their interpretations of the situations they face and, in turn, affect their choices” (Hambrick, 2007, p. 334). The upper echelons perspective explicitly takes into account entire teams as organizational leaders and suggests that the combination of team members’ characteristics—namely, team heterogeneity—influences organizational outcomes (Carpenter et al., 2004; Jin et al., 2017). Key dimensions of heterogeneity include team members’ functional (Leung, Foo, & Chaturvedi, 2013) and educational (Tzabbar & Margolis, 2017) backgrounds, information held by team members (Mihalache, Jansen, Van Den Bosch, & Volberda, 2012; Wei & Wu, 2013), and team members’ values (Adams, Licht, & Sagiv, 2011). While heterogeneity can lead to lower team functioning due to arising fault-lines (Ndofor, Sirmon, & He, 2015) and conflict between team members due to a lack of understanding (Miller, Burke, & Glick, 1998), heterogeneity can also broaden a team’s knowledge base (van Knippenberg, De Dreu, & Homan, 2004), thus increasing organizational performance (Higgins & Gulati, 2003; Wei & Wu, 2013).

2.3.2 Vision and the entrepreneurial context

An organizational vision is an idealized future image of the organization, which is crafted by its leaders and pursued by its members (Conger & Kanungo, 1987) and captures the organization’s core values and ideology (Berson et al., 2015). Most research describes vision in rather abstract terms such as inspirational (Sosik & Dinger, 2007), far-reaching (Berson et al., 2015), optimistic (Berson, Shamir, Avolio, & Popper, 2001), and challenging (Baum et al., 1998), but only few studies provide examples illustrating content vision dimensions such as customer satisfaction, market leadership, or performance (Larwood, Falbe, Kriger, & Miesing, 1995). While an organizational vision can provide the basis for developing goals, strategies, and mission statements, it is distinct from these concepts (Baum et al., 1998) because visions (1) do not capture the specific, measurable, and reachable objectives for the near future that comprise goals (Berson et al., 2015; Kirkpatrick & Locke, 1996); (2) are less specific and less closely linked to strategic planning than mission statements (O’Gorman & Doran, 1999); and (3) are

more abstract than strategy (Kirkpatrick, Wofford, & Baum, 2002; Larwood et al., 1995). Through motivating followers and enhancing their attitudes and performance (Bass & Avolio, 1993) organizational visions can increase innovation (Hulsheger, Anderson, & Salgado, 2009) and success (Ashford, Wellman, de Luque, De Stobbeleir, & Wollan, 2018; Ensley et al., 2006). Studies have found that visionary leadership is more likely in smaller organizations that are decentralized and sufficiently formalized (Walter & Bruch, 2010).

In a team setting, it is typically assumed that a single leader (e.g., CEO) articulates his or her vision to the team (Ashford et al., 2018) or that a team develops their (team) vision collectively (Knockaert, Ucbasaran, Wright, & Clarysse, 2011). Independent of the development process by one leader or the entire team, previous literature assumes that there is *one* vision for the organization which is shared to (at least) some extent by its members (Sinkula, Baker, & Noordewier, 1997; M. A. West, 1990). A shared organizational vision can positively influence processes and outcomes on the team (e.g., innovation effectiveness; Pearce & Ensley, 2004) and firm level (e.g., Carton, Murphy, & Clark, 2014; Kroll et al., 2007).

Compared to organizational visions, which are directed toward firms' internal and external stakeholders (Shamir, House, & Arthur, 1993), entrepreneurial visions capture how "entrepreneurs envision their venture strategically as an extension of themselves and their needs" (Ruvio et al., 2010, p. 145). Building on this idea, an entrepreneurial vision can also capture the entrepreneur's personal future, which does not necessarily align with the venture's future. To be effective, entrepreneurial visions need to be clear, future oriented, stable, inspirational, and promise a better future (Baum et al., 1998; Bird & Jelinek, 1988; Gupta et al., 2004). Such entrepreneurial visions guide entrepreneurs' strategic choices (Bird, 1988), especially during the early stages of the entrepreneurial journey (Ruvio et al., 2010). Appealing and clearly communicated entrepreneurial visions can increase commitment among internal and external stakeholders (Barringer et al., 2005; Baum et al., 1998; Bird & Jelinek, 1988; Discua Cruz, Howorth, & Hamilton, 2013), thus enhancing venture performance (Baum & Locke, 2004). Finally, prior studies suggest that founding team members should clearly articulate their individual visions and negotiate one organizational vision they can share (N. R. Anderson & West, 1998; Sinkula et al., 1997), which has then the potential to increase venture performance (Kroll et al., 2007).

2.3.3 Opportunity development

Prior work on the entrepreneurial process has acknowledged that initially recognized opportunities are further developed in dynamic social processes (Dimov, 2007) “through which insights are contemplated, new information is collected and considered, and knowledge is created over time” (Lumpkin & Lichtenstein, 2005, p. 457). Consistently, Dimov (2007, p. 714) conceptualizes *opportunity development* as “a dynamic, iterative, and a socially embedded view of how entrepreneurial opportunities reach their final form,” through which initial ideas are “elaborated, refined, changed or even discarded.” Similarly, from an organizational learning perspective, Dutta and Crossan (2005) highlight the importance of establishing linkages with multiple stakeholders to acquire the information needed to successfully develop a new opportunity and take it to market. While stakeholders can be external (e.g., future customers, investors, experts) and internal to the venture (i.e., founding team members, employees), their feedback guides the entrepreneurial actors’ decisions and actions (Dutta & Crossan, 2005) and reduces the uncertainty inherent to novel opportunities (Ravasi & Turati, 2005). Yet, in contrast to pivoting, which refers to “a special kind of change designed to test a new fundamental hypothesis about the product, business model, and engine of growth” (Ries, 2011, p. 173) and emphasizes reactions to external feedback (Grimes, 2018; Vogel, 2017), opportunity development covers all opportunity changes independent from a specific feedback source or founding approach.

2.4 Research method

While prior upper echelon research has focused on observable dimensions of heterogeneity related to team members’ past (e.g., experience, prior company affiliation, education) and present (e.g., functions, social capital, skills), little is known how less observable and future-related types of heterogeneity such as team members’ visions impact team decision making and organizational outcomes. Moreover, the leadership perspective on organizational visions insufficiently captures that entrepreneurial visions also reflect the individual entrepreneur’s personal needs (Ruvio et al., 2010) and thus, that members of a founding team might hold different entrepreneurial visions even if they share the same organizational vision. Finally, although opportunity development studies have emphasized the social nature of the process the emphasis has been on feedback from external sources but less on potential influences of the founding team. Given these limited insights and theoretical precedent on the role of entrepreneurial

visions in shaping opportunity development in a founding team setting, we employ a qualitative, multiple case study approach suited for exploring the “how”-question (Eisenhardt, 1989a) that guides our study: *How do the entrepreneurial visions held by members of founding teams impact the future development of the opportunities their ventures pursue?* More specifically, since opportunity development is a process that unfolds over time, we rely on a longitudinal design to capture sequences of events and outcomes over an extended time period (Van de Ven, 2007).

2.4.1 Sample selection and data collection

Our study setting includes new ventures that are managed by a founding team and are early in the process of developing entrepreneurial opportunities. Since ventures located in business incubators often meet these requirements (Ebbers, 2014), we identified ten incubators in the large European metropolitan area of the first author’s university to find potential sample candidates. From the incubators’ websites, we created a list of 289 ventures that are managed by a founding team (according to the ventures’ websites). We contacted all ventures in person or via phone to recruit participants for our study. From the 289 ventures, 64 complete founding teams agreed to participate. Importantly, we recruited entire teams, which differentiates our study from other studies on founding teams’ (collective/shared) organizational visions using a key-informant approach (e.g., Ensley et al., 2006). This approach allowed us to generate new insights on the role of individual team members’ visions versus the visions shared by the team. The 64 teams were diverse with regard to size, members’ backgrounds, and ventures’ industries.

For each of the 64 teams, we collected data from various sources over a period of more than 30 months (see Appendix 7.1.3). Separated by an interval of six to eight months, we conducted two rounds of semi-structured interviews³ with each team member and used these data as our main information source. By conducting individual interviews (rather than group interviews), we were able to guarantee confidentiality and encouraged the team members to speak openly, resulting in rich information from each team member’s perspective. We developed interview guides (see Appendix 7.1.4) for both rounds of interviews based on recommendations for qualitative research methods (Edmondson & McManus, 2007). We conducted follow-up interviews for clarification when questions remained open. In total, we conducted 291 interviews

³ Referred to as “1” and “2” in the quotes in the results section

(typically lasting 50 to 60 minutes). All interviews were conducted and analyzed in the German, the language, in which all participants were native or absolutely fluent. The transcripts were then independently translated by one author and a freelance translator with a PhD in the English language.

To minimize biases from the team members' limited rationality and imperfect recall, we collected a wide range of additional data that allowed us to triangulate and validate our findings from the interviews (Yin, 2009). First, we had the opportunity to videotape a team strategy meeting for 20 of the 64 teams (on average about 90 minutes in lengths). In addition, we took extensive field notes and collected secondary data from multiple additional sources (e.g., newspaper articles, online blogs, news platforms, press releases). We closely monitored the ventures' websites and the secondary data sources during, and for more than 24 months after our study period to capture the ventures' long-term development (resulting in more than 400 pages of additional material).

Although our data-collection effort started with 64 teams, for theory building, we relied on cases that were rich in information (Patton, 2002) and were therefore best suited to "replicate or extend the emergent theory" (Eisenhardt, 1989a, p. 545). We dropped 24 cases for which we had insufficient information.⁴ In the next step, we applied a theoretical sampling approach (Miles & Huberman, 1994) to identify a manageable number of cases while having sufficiently rich information to develop theory (Brown & Eisenhardt, 1997). We used maximum variation sampling to better reflect reality and increase the robustness of our model (Creswell, 2012). Specifically, we contrasted cases showing the most extreme aspects of relevant constructs (Yin, 2009). To this end, we explored the entrepreneurial visions held by the individual team members (see Appendix 7.1.5 for examples). To precisely capture the team members' visions instead of goals, we compared their answers to our question about their goals for the venture. Consistent with prior work (Berson et al., 2015; Kirkpatrick & Locke, 1996), the descriptions differed substantially in their content and the team members described their goals in more specific, temporally nearer, and more operational terms, whereas they described their visions in a more abstract way referring to an ideal idea for the more distant future. When we summarized the visions in our own words to understand their key dimensions, it became apparent that for

⁴ We excluded two cases in which the venture was sold shortly after the first interview, three ventures that failed very soon after the first interview round (however, we kept ventures in the sample that failed after the second interview round and hence provided detailed information), eight cases because at least one team member did not give sufficiently clear answers for the main topics of our interviews, and eleven cases because the team members in total provided only limited information about their venture's opportunities and their development.

some teams, members' visions overlapped highly and were similar, whereas for other teams, the members' visions differed substantially and were incompatible (i.e., impossible to realize within the same venture). The former teams had what we labeled *congruent visions*, and the latter teams had *incongruent visions* (we provide a more detailed conceptualization of vision congruence below). This heterogeneity in members' visions emerged as a starting point for our theorizing.

To build our model in the next step, we focused on extreme cases of vision congruence or incongruence and selected eight founding teams for detailed analysis, a number recommended for inductive theorizing from multiple case studies (Eisenhardt, 1989a). The eight cases comprised four teams holding congruent visions (Teams C1–C4) and four teams holding incongruent visions (Teams I1–I4) as observed in the first interview. Visions were assessed by three independent coders with consistent results. In selecting the eight “extreme” cases from the 40 remaining cases, we also ruled out alternative explanations for the consequences of vision congruence/incongruence, particularly regarding how the founding teams develop opportunities. First, since a venture's opportunity development might be influenced by venture age and size (e.g., older and larger ventures are likely to have more established routines and processes to develop an opportunity), we included only ventures that were younger than three years and had less than ten full-time employees. Second, the way new ventures develop an opportunity likely depends on the characteristics of the industry the opportunity targets, such as the required funding (Petty & Gruber, 2011) and probability of successfully market entry (Sandberg & Hofer, 1987). Therefore, we carefully matched the group of teams with congruent visions and the group of teams with incongruent visions with respect to their industries. The eight cases cluster into four pairs of similar industries, with one case of a pair belonging to the group with congruent visions and one to the group with incongruent visions (e.g., C1 and I1 are both in the service industry).

We reached theoretical saturation with these eight cases. To challenge our model, drawing on our rich data we went back to our initial sample and analyzed the 40 remaining cases. When we looked for new theoretical insights in the remaining cases (particularly those we eliminated because they were not “extreme cases”), we could not find contradicting or new evidence that would justify adapting our proposed model. In the results section below, we provide selected insights from additional confirmatory cases (XC1, XC2, XI1, XI2) out of this group to validate our findings. Table 2 provides an overview of the eight cases. We use fictitious names throughout this paper to protect participants' and ventures' anonymity

Table 2. Sample overview

Team	Team and Venture Characteristics						Opportunity Overview			
	Founders	Age	Educational Background	Year Founded	(Initial) Industry	Size: Full time Employees	(Initial) Opportunity		Opportunity Changes over Time	Opportunity Performance
C1	Anthony Anna	32 34	Business Design	2010	Services (design)	0	Product-development agency (own products and as a service with a sustainability focus)	More incremental nature of initial opportunity	No fundamental changes	Commercialization
C2	Bill Bart Bob Ben	30 29 33 30	Engineering Science Engineering IT	2010	Hardware (sensors)	5-10	Sensor company	More radical nature of initial opportunity	No fundamental changes	Commercialization
C3	Charles Chris	61 27	Social science Business & Engineering	2010	Software and IT services (retail)	~5	Analytics and loyalty program for retailers	Medium radical nature of initial opportunity	No fundamental changes	Opportunity termination (resulting in venture failure)
C4	Douglas David Derek Dean Dylan	23 24 24 31 24	Math & Science Engineering Engineering Engineering & Business Engineering	2010	Consulting (innovation)	0	Consulting on innovation topics	More incremental nature of initial opportunity	No fundamental changes	Opportunity termination (resulting in venture failure)
I1	Evan Elias Elon	36 34 33	Engineering Business IT	2010	Services (publishing)	5-10	Publishing platform and publishing software	More incremental nature of initial opportunity	New e-paper services and complete redesign of publishing platform	Commercialization
I2	Fred Fitz	50 47	Engineering Engineering	2009	Hardware (media)	0	Smart TV application	More radical nature of initial opportunity	Portfolio of digital signage products using cloud technology	Commercialization
I3	Grace Garett	28 27	IT & Business Engineering	2010	Software and IT services (sports)	0	Streaming technology and services	Medium radical nature of initial opportunity	Idea of white label offerings for third parties and own content	Opportunity termination (resulting in venture failure)
I4	Harris Harold Hugh	22 24 26	Science Engineering Business	2011	Consulting (IT)	~5	Consulting based on simulation software (focus) and ideas for analysis software	Medium radical nature of initial opportunity	Analysis technology only	Commercialization

Confirmatory cases: XC1 (two founders with diverse educational background; sports industry; opportunity termination); XC2 (two founders with similar educational background; services (food); opportunity termination); XI1 (initially three founders with diverse background; initially services (outsourcing) later IT software development; opportunity commercialization); XI2 (two founders with similar educational background; IT /e-commerce platform; opportunity termination).

2.4.2 Data analysis

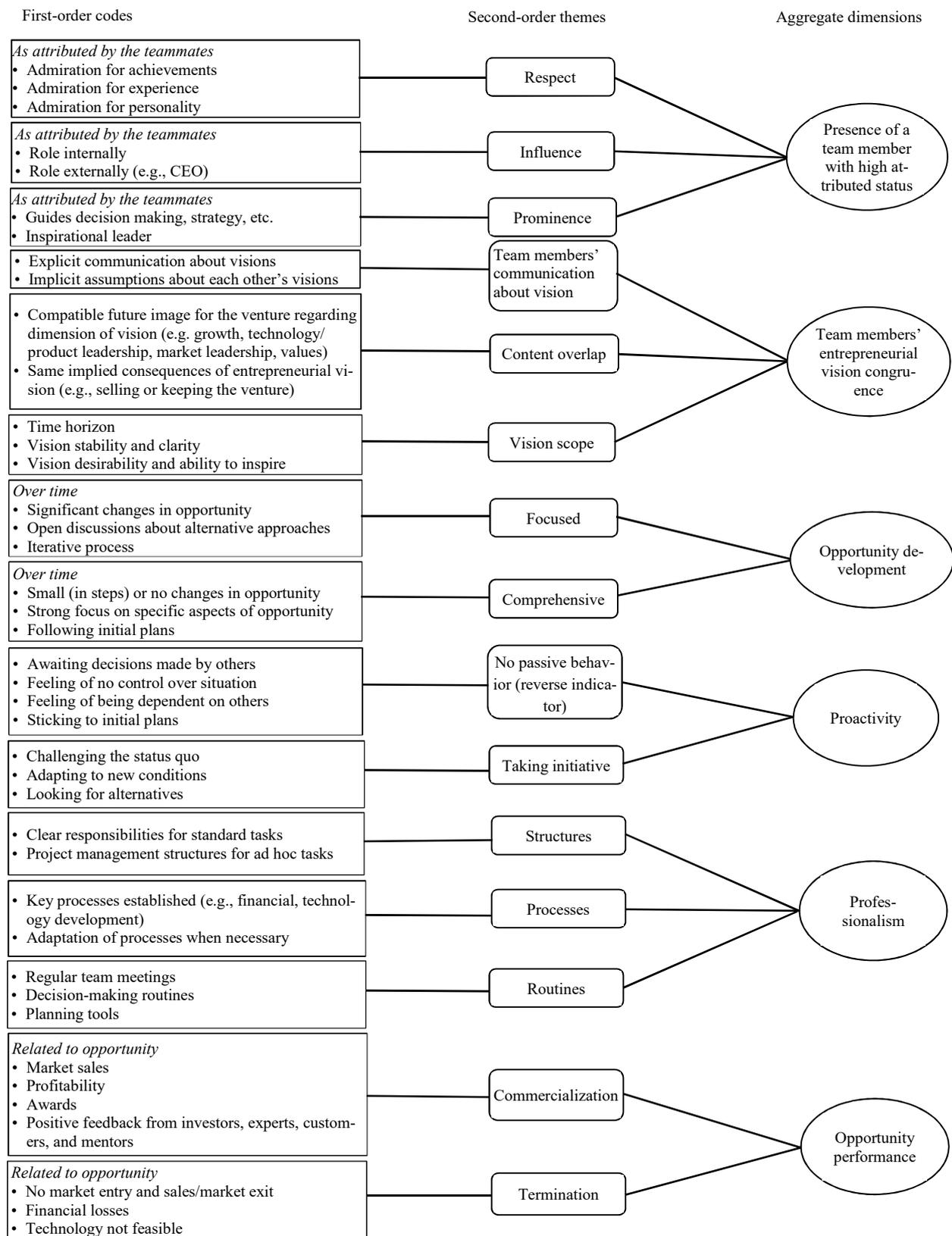
To analyze the interviews and additional data on the eight sample cases, we followed an inductive approach (Corbin & Strauss, 2008) using the NVivo (version 10) software to manage our data. We analyzed the data with an open mind and did not formulate any expectations regarding the nature of the relationships between potential constructs. Thus, we allowed the data to speak for themselves (Suddaby, 2006) while being careful not to interpret too much into the data.

Before starting data coding, we summarized the cases and developed a timeline for each case showing the most important events within and after the study period. Some of the important themes had already become obvious at this point from a comparison of the cases. For example, we found that some teams developed their opportunities using a more focused approach with minor adaptations, whereas other teams made substantial changes. To understand opportunity development over time as well as the events and processes that influenced opportunities, we drew process charts, adding important team dynamics (e.g., intense debates within the team, changes in team satisfaction) to the timelines associated with the ventures' opportunity development. Moreover, to visualize relationships and dynamic processes within each team, we drew figures illustrating previous relationships, team member backgrounds, team communications, and changes in team member relationships and their interactions.

2.5 Results

We started the coding process by defining an initial coding scheme of categories that we assumed to be relevant for our research question based on the themes emerging from the data and prior research on visions, founding teams, and opportunities. The initial coding scheme was constantly refined in an iterative process (Miles & Huberman, 1994). For example, we added proactivity and professionalism as two important team behaviors as well as more codes on opportunity development. The final coding scheme comprised 133 first-order codes. For all eight cases, two independent raters assessed the level of the particular code (e.g., if team satisfaction was high or low). Their initial agreement was 89.3%, similar to other studies (Fauchart & Gruber, 2011; O'Neil & Ucbasaran, 2016). The raters discussed unclear cases until both agreed. Based on these assessments and quotes tables, we conducted a cross-case comparison, highlighting differences between teams with congruent and incongruent visions. In an iterative process (Strauss & Corbin, 1998), we summarized first-order codes into second-order themes until we were unable to identify new themes. In total, we identified 15 second-order themes that seemed relevant in all the cases. The themes represented six overarching aggregate dimensions (Figure 1).

Figure 1. Data structure



2.5.1 Founding team members' vision congruence

Analyzing the team members' statements on their entrepreneurial visions, we realized that the content of these visions differed along key dimensions. For example, some team members' visions focused on growth, others emphasized the innovativeness of their venture's offerings, while still others highlighted that they saw their venture as a vehicle to do something good for other people and/or the environment. When asked about their entrepreneurial vision, team members expressed not only an organizational vision but included personal aspects as well. For example, while the organizational vision that Team C2 presented on their website was about becoming a technology leader, in our interviews, all team members stressed that an important aspect of their entrepreneurial vision was to sell the company in the future and that they saw technology leadership only as a means to reach a successful exit. This expression of themselves and their personal preferences as part of their entrepreneurial vision (Ruvio et al., 2010) highlights the difference but also the interdependence between organizational and entrepreneurial visions.

In the next step, we compared the key dimensions of members' entrepreneurial visions within the teams and, again, found considerable differences. For some teams, all members held overlapping and highly compatible entrepreneurial visions such that all individual visions could be realized simultaneously through developing the venture. For other teams, however, the members' entrepreneurial visions differed fundamentally and were incompatible—it was impossible to realize all visions simultaneously within one venture. We labeled the former teams as having *congruent entrepreneurial visions* and the latter as having *incongruent entrepreneurial visions*. By entrepreneurial vision congruence, we refer to the degree to which entrepreneurial visions held by individual team members overlap and are compatible (i.e., realizing one member's vision is not in conflict with realizing other members' visions). In contrast to goal congruence, which relates to more specific goals in the nearer future (Kristof-Brown & Stevens, 2001), vision congruence captures the overlap and compatibility of more abstract images of the distant future.

Importantly, entrepreneurial vision congruence is different from the concepts of collective or shared vision (Ensley et al., 2003). Collective and shared vision imply that there is *one vision for an organization*—either established by a leader for followers (Shamir et al., 1993) or collectively developed by a team (Pearce & Ensley, 2004). In contrast, congruent visions are not necessarily explicated and can develop when team members share their vision, but they can

also arise because of an initial similarity between team members' visions that is never explicated in a "sharing" process. For example, while one of our sample teams with congruent visions explicitly discussed team members' visions (C4), others did not explain them (C1, C3) or just assumed that the other members held similar visions (C2: "I believe" [Ben and Bill, 1], and "As far as I understand" [Bart, 1]). Importantly, vision communication did not necessarily lead to congruent visions. For example, members of Team I4 held incongruent visions and acknowledged that they "have problems synchronizing [their] visions" (Hugh, 1), although team members compared their visions "regularly" and even conducted a "workshop . . . to try again to synchronize a bit." While the team members discussed their visions, they did not come to an agreement. Interestingly, I4's visions became more congruent over a longer time, which we discuss later.

Thus, independent of founding team members' discussions of their visions, entrepreneurial vision incongruence acknowledges that individual members' visions with fundamentally incompatible content can *co-exist over time*. For example, in team I4, Harold's vision was related to a quick exit (selling the venture), whereas Harris' vision implied keeping the venture for a longer time horizon and continuously developing it. Hugh (I4, 1) saw exit as one possible but not necessary option and described the questions arising from his teammates' incongruent ownership visions as follows: "What should our product be? Which markets do we want to be in? How fast and huge do we want to grow?"

To assess vision (in)congruence, we evaluated the content of the individual entrepreneurial visions along a set of key dimensions (i.e., venture ownership, growth, technology/product leadership, market leadership, internationalization, values, profit orientation, and time horizon) emerging from the interviews. Next, we evaluated which of these dimensions the team members emphasized most strongly and as being most central in the interviews (dominant dimension). For assessing (in)compatibility, we focused on team members' dominant dimension, assuming that this dimension would be most influential on their decisions regarding opportunity development. Visions were incompatible either because team members' specifications of the same dominant dimension conflicted (e.g., venture ownership: exit versus keep the venture) or because team members emphasized different dominant dimensions that had conflicting implications for the venture's development (e.g., venture exit versus internationalization versus technology/ product leadership). Table 3 illustrates quotes for the four teams with highly congruent visions and the four teams with highly incongruent visions.

Table 3. Statements on team members' entrepreneurial visions

Vision Summary	Statements from First (1), Second (2), and Follow-Up (F) Interviews or from Triangulation Material (T)
<i>High entrepreneurial vision congruence among team members</i>	
C1 Anthony: Developing sustainable products and building a financially stable company	"A certain popularity in [our] areas, the markets we are focusing on" (1); "To position ourselves so that we can choose the projects according to our ethical guidelines " (1); [When asked about their products] "We want to develop sustainable and valuable products from an ecological point of view " (1); "My goal is to say 'ok that is in line with our moral standards .' . . . That's brand building for our venture" (1); "It is our aim to develop [our] own products and offer services so that they can balance each other and the venture can live from either of them theoretically" (1).
Anna: Developing sustainable products and building a financially stable company	"Expedient, beautiful, sustainable products" (1); "A company which provides for us the basis to live a good life"(1); "We do not want to work for [previous employer] who earns a lot of money without giving back" (1); "I want to look in the mirror and say 'yes, what we are doing is good from a moral perspective '" (1).
C2 Bill: Building a tech company that can be sold (i.e., exit)	"That the customers . . . trust our technology" (1); "We all think about when to sell the company. I think for such a company this is almost necessary"(1); "Staying independent as a small company in that industry is difficult. Thus, it [selling the venture] is the standard. Also, investors want to see their return" (1); "I <i>believe</i> that [selling the company] is consensus between us" (1).
Bart: Building a tech company that can be sold (i.e., exit)	"The vision is to build that venture for a few years and then to have a good exit " (1); "The venture should be bought by an investor . . . Therefore, the technology must be developed" (1); "The patent must be there. [The venture] needs to be in such shape that investors are willing to buy us. Our considerations are guided by that. Our thinking is often "What would an investor say in five years?" (1) " <i>As far as I understand</i> it, it became clear that we all wanted to sell the company eventually" (1).
Bob: Building a tech company that can be sold (i.e., exit)	"The vision for the venture is that we step for step develop the venture into a tech venture. . . . The established companies [in that market] should be in a competition on who will be buying us. That's my big vision for the venture" (1); "We would like to bring our baby [the technology] to the market and be successful. Maybe even a good exit sometime" (1).
Ben: Building a tech company that can be sold (i.e., exit)	"I <i>believe</i> we share pretty much this exact vision. The vision is that we will be [the] leader in technologies for [name of C2's market segment]. So that eventually, we can sell the company for as much money as possible" (1); "[Once sold], one does not fight as a lonesome cowboy anymore. . . . Perhaps we [will] continue working there but then we are not the leaders anymore and it is not our money invested there" (1); "[Selling the venture] will take some time—one needs time to develop something [product based on technology] interesting" (1).
C3 Charles: Selling the company (i.e., exit) for millions	"The vision for [C3] is clear. I do NOT want to build a mid-sized company. . . . I want to make it into something like Google. However, I am skeptical about this at the moment; [it is] more probable that we will sell this whole thing for 30 to 40 mill. " (1); "Of course, it is also possible that through our pilot customers we develop [the company] so well that . . . we are worth a 60 to 70 mill exit" (1).
Chris: Selling the company (i.e., exit) for millions	"A great exit " (1); " After the exit , I want to work on my own new ideas" (1); "We want to grow [with potential pilot customers]. . . . Then we want an exit . That's not only what our investors want, but all founders—a great exit, for example, an IPO or trade sale . In our industry, many major players have their own investment vehicles. So in our case it might be a strategic investor [as a buyer]" (1).
C4 Douglas: Owning a successful company	"We <i>compared</i> our visions and realized we wanted to reach the same outcome" (1); "To work there until retirement" (1); "Grow with the partner [huge IT software house with an international footprint]" (1); "To build it up so that it is successful and I can make a good living of it " (1).
David: Owning a successful company	"The long-term vision for the company would be to do this internationally and work as the leader of an innovative service provider. In that company I want to be responsible for . . . developing our methodological approach . . . and the continuous improvement process" (1); Wants to work there until end of professional life (T).
Derek: Owning a successful company	"To build it up so that—in the best-case scenario—we can work there until retirement" (1); "My vision is to be successful " (1); "I would like to see the company grow, I would like to do projects, in the end I would like people to be happy" (1); [When asked about their vision] "We <i>compared</i> our goals two days ago to see if our goals are the same or if they conflict with each other" (1).
Dean: Owning a successful company	"We had thought about it: this is a vision which we can share" (1); "Be represented internationally, which also depends on our partners" (1); "I would like to have a brand, if possible not just in [home country]" (1); "In 10 years 40 million Euro revenue " (1); "In 10 years I still want to be a leader in [C4]" (1).
Dylan: Owning a successful company	"Generally, I would like to be really successful with this company. That is my great vision. And not just in the field we work in right now but I believe we have so much potential in other areas as well" (1); "In our venture . . . when I am 80 years old I want to go to bed knowing I did well" (1); "I do not want to starve. But I do not need to become the second Bill Gates [referring to exit/IPO]" (1).
<i>Low entrepreneurial vision congruence (i.e., vision incongruence) among team members</i>	
I1 Evan: Being a market leader for publishing services through significant long-term growth	"So that we can transform the innovative leadership, which we already have, into a definite market leadership " (1); "And that we can define what is happening in that [specific segment of the] publishing market, especially with regard to user numbers" (1).
Elias: Being a market leader for publishing services through significant long-term growth	"That's clear. I want us to become a market leader [describes details of market]" (1); "We need to scale. We will enter into new markets [in the next years]. But first we need to gain market share in our main market. . . . That's enough to do until we enter the next market segment" (1)
Elon: Maintaining a short-term focus on keeping the status quo, developing technology, and reaching operational goals	"For me, it's just important that we do not destroy the status quo—what we built . . . so that we still follow the plan [the operative, short-term plan he described before] by making good decisions that the company develops further and meets the [short-term] goals " (1); "I would like to have more resources for my IT team to start building some things, structure them differently" (1).

<p>12 Fred: Creating value and personal financial wealth by selling (parts of) the venture in the long term</p>	<p>“It’s simple: create value and sell this venture to get everything which we put in now as a return. We do not do this for the fun of it, or because we like software coding that much but for getting a financial return” (1); “Create value. Value in business terms can be measured by demand, by the money somebody is willing to pay for the product” (1); “The vision for the company is to create a basis and values” (1); “To, at least, contribute something small to society” (1); “It is the vision to create options so that those options can then be used to either, as mentioned, get out, sell parts, or the whole thing” (1).</p>
<p>Fitz: Focusing on the short-term only; believes long-term thinking is a waste of time</p>	<p>“Well, I do not really think in the long term at the moment. As a vision, I could really see myself entering into a long-term partnership with this customer [their mid-sized pilot customer] and creating several things for the customer. How this works out financially is a totally different matter. And that is only secondary for me” (1); [Interviewer asked about the timeframe of his vision] “Monday to Friday [laughs] . . . I would say two to three years seems realistic. [Anything over a longer term] is a waste of time, in my experience” (1).</p>
<p>13 Grace: Owning the venture and being a market leader</p>	<p>“My goal is to make [I3] a meta-gym. A collection of gyms which all use this service. I want [I3] to become the standard for high-quality gyms” (1); “I do want to own several companies [including I3]” (1)</p>
<p>Garett: Selling the venture (i.e., exit)</p>	<p>“I think in 10 years we will have already sold the company . . . [or] in three to five years” (1); “For me the idea is that we earn a lot of money with [sale of I3] so that I can start new projects. I have many ideas I want to realize” (1); “We have basically agreed on this, Grace and I” (1).</p>
<p>14 Harris: Being a mid-sized technology leader while keeping ownership</p>	<p>“A successful company which is innovative which keeps on developing the product, the technology. I am NOT going to look for exit two years from now. I can imagine building this venture long term” (1); “My vision would be to have about 100 employees three years from now. That would be really great” (1); “There were different opinions but only because we had not really thought it through” (2).</p>
<p>Harold: Developing interesting technology so that the venture can be sold (i.e., exit)</p>	<p>“To develop the technology to a degree where it is interesting for another company to take it over” (1); [Interviewer asks if that would mean selling the company] “Yes, exactly. Making sure that we have smart stuff [technology] which is interesting for others to buy” (1); “In some ways we all have the same vision. But maybe it is not exactly the same for everyone what we imagine, but we are all somehow visionary guys” (1); “It’s a good day when I have the feeling that the day helped to reach <i>my</i> vision” (1).</p>
<p>Hugh: Achieving growth; also going international and maybe an exit</p>	<p>“A software provider established in different markets . . . with a product which is competitive, with a stable revenue and cash basis. Until then we need to find out what’s the product, what are the best markets. Since we are at the beginning, this is not fixed yet. Also [we need to define] whether we want to focus on technology or not? We are good in research, finding algorithms, etc. Or do we just want to have the best product with fewer features and focus on sales? But the vision is actually to be successful” (1); “So either . . . the technologies or the product have been bought by an accordingly big player or it has become an established provider . . . with a few hundred employees” (1); “The question is whether one makes an exit or [good] revenues. Therefore, one needs to scale and sell internationally” (1); “Until now we are just a one-product company [in the market at this moment]. In 10 years we need to have two or three new products” (1); “Sometimes we have problems synchronizing our visions” (1).</p>

Table 4 summarizes the team members’ visions along their key dimensions and highlights the dominant dimensions leading to our assessment of vision (in)congruence for these teams. This table also illustrates how teams communicated on the members’ visions showing that congruence does not require vision communication or sharing within the team.

Table 4. Vision dimensions and (in)congruence

Team	Team Member	Ownership	Growth	Technology/Product Leadership	Market Leadership	Internationalization	Values	Profit Orientation	Time Horizon	Vision Communication as Source of (In) Congruence
C1	Anthony		Low		Low		Sustainability	Low (Stable and reasonable profit)		No communication
	Anna		Low		Low		Sustainability	Low (Stable and reasonable profit)		
C2	Bill	Exit	Medium	High						No communication, but team members assume they have similar visions
	Bart	Exit	Medium	High						
	Bob	Exit		High						
	Ben	Exit		High						
C3	Charles	(Great) Exit	High							No communication
	Chris	(Great) Exit	High							
C4	Douglas	Keep	High		High			High		Explicit communication about visions
	David	Keep	High			High		High		
	Derek	Keep	High			High		High		
	Dean	Keep	High					High		
	Dylan	Keep	High					High		
1	Evan		High		High				Long	Explicit disagreement
	Elias		High		High				Long	
	Elon		Low	Medium-High					Short	
2	Fred	(Partial) Exit	Medium				Contribute to society	High		No communication
	Fitz	Jokes about exit					Relationship with customer	Low	Short	
3	Grace	Keep			High					Mixed messages regarding communication
	Garett	Exit								
4	Harris	Keep	Moderate	High				High		Explicit disagreement
	Harold	Exit		High (as means for exit)						
	Hugh	Maybe exit	High			High		Stable		

Dominant dimension: Bold Shadow: = Congruence; = Incongruence

Dominant dimension= dimension the team member emphasized most when talking about their entrepreneurial vision; (In)compatibility = based on team members' dominant dimension but not on dimensions of minor importance, assuming that the dominant vision would be most influential on founders' venture decisions. Visions were incompatible either because team members' specifications of the same dominant dimension conflicted (e.g., venture ownership: exit versus keep the venture) or because team members emphasized different dominant dimensions with specifications that had conflicting implications for the venture's development (e.g., venture exit versus internationalization versus technology/ product leadership)

In the eight case teams, vision *congruence* occurred along different dominant dimensions. While both C1 team members had congruent visions regarding values around sustainability, C2 and C3 had congruent visions regarding envisioned future ownership (i.e., exit). However, these teams mentioned different aspects: C3's team members focused on the personal financial outcome (exit in the "tens of millions"), whereas C2's team members described the way they wanted to achieve a successful exit (through technology leadership). Although Team C4 also described ownership as the dominant dimension of their visions, all five team members sought to build a successful company that they wanted to work for until retirement. In our initial sample of 64 teams, we found vision congruence along other dimensions as well. For example,

both team members of XC1 envisioned building a profitable company (dimension: profit orientation) that generates personal wealth for them.

Future venture ownership (i.e., selling the venture) was also an important dimension leading to vision *incongruence* among our case teams. For two cases (I3, I4), team members' visions were incongruent with regard to exit, but this incongruence manifested in different ways. While incongruence became obvious in I3 team members' contrary opinions on the same dominant ownership dimension (whether to sell the venture or not), for Team I4, vision incongruence was based on team members' focus on different dominant dimensions with incompatible specifications.⁵ Specifically, Harold envisioned selling the venture, while Harris envisioned technological leadership, and Hugh envisioned quickly building a highly international company. Although these different visions might not appear to be strictly exclusive in the long term, they were actually incompatible for I4 since working toward all of these ambitious visions simultaneously was impossible given the venture's limited resources. Indeed, even the team members themselves acknowledged that they held incongruent visions, with Hugh (1) stating that "sometimes we have problems synchronizing our visions" (below, we discuss how I4 developed congruent visions over the course of our study). Further, for Team I2, vision incongruence emerged based on team members' different time horizons, which in turn implied incompatibility along key dimensions. Specifically, Fred (1) stressed that he envisioned selling (parts of) the venture after "creating value" and "at least contribute something small to society," indicating a long time horizon. In contrast, his co-founder Fitz (1) focused on "Monday to Friday" and believed that thinking ahead for more than two or three years was "a waste of time." This short-term thinking was also reflected in his statements that monetary aspects were not important to him at all compared to the venture's current relationship with customers. Similarly, for Team I1, members' visions were incompatible based on different dominant dimensions. While Evan and Elias envisioned their venture as a market leader in the future, Elon emphasized following current operational plans and maintaining the status quo. These visions were incongruent since striving for market leadership required long-term strategic actions (e.g., developing a high-growth strategy) that were incompatible with a focus on keeping the status quo.

⁵ In addition to holding incongruent visions with different dominant dimensions, Harris mentioned that he wanted to keep the venture as a side aspect of his vision which was incompatible with Harold's vision of selling the venture. However, since our (in)congruence assessment is based on the dominant vision dimension, this finding was not the central argument of I4's vision incongruence but rather additional supporting evidence.

Finally, in our initial sample of 64 cases, we also found vision incongruence with regard to other dominant dimensions. For example, Team XI1's members had different aspirations regarding growth, ranging from building a small company with ten employees to building a mid-sized company with 100 employees, which implied different strategies with regard to financing, establishing management structures, and providing offerings to customers.

2.5.2 Emergence of founding team members' vision congruence

Since we purposefully created a rather homogenous sample of eight teams in terms of venture and industry characteristics to rule out alternative explanations for consequences of vision congruence (see our description of the sampling procedure above and Table 2), we were not able to explore their impact in our study but hope that future research will do so. However, taking advantage of our rich data, we explored a broad set of constructs related to the team and individual team members described in the upper echelons and entrepreneurship literatures as potential antecedents of vision congruence.⁶ From all these analyses, we did not find a clear pattern suggesting that these constructs triggered vision (in)congruence. However, the single characteristic that emerged from our data as a key shaper of vision congruence was *the presence of a team member with high attributed status*. In line with C. Anderson, John, Keltner, and Kring (2001, p. 116), we understand attributed status as “the amount of respect, influence, and prominence” team members ascribe to each of their teammates. We assessed an individual team member's status based on the statements made by teammates. Teams in which one team member was attributed a higher status by all the other team members tended to hold congruent visions, whereas teams in which no team member was attributed higher status tended to hold incongruent visions (see Table 5).

⁶ We explored demographics discussed in previous work (e.g., Bromiley & Rau, 2016; Carpenter et al., 2004; Jin et al., 2017), such as team member age and different types of experience (i.e., industry, functional, educational), as well as aspects describing team member relationships (i.e., hierarchy, power, status) and team size. In addition, we explored characteristics described in work on founding teams, for example friendship between team members (Zolin, Kuckertz, & Kautonen, 2011), founding experience (Delmar & Shane, 2006), and equity distribution (Breugst, Patzelt, & Rathgeber, 2015).

Table 5. Presence of a team member with high attributed status

Team	Team Member with High Attributed Status	Statements from First (1) and Second (2) Interviews or from Triangulation Material (T)
C1	Anna	Anthony: “She does the real business handling; I want to be in the background”; “I would have never started alone”; “She tells me what to do”; “She manages all the important contacts” (all 1). Field note: Anthony admires Anna. He likes to execute (rather small and more operational) tasks defined by Anna (T).
C2	Bob	Ben: “He is a visionary leader”; “He is good at verbalizing things [that are] hard to say” (all 1). Bill: “He is defining the vision” (1). Bart: “He is the most experienced and oldest. And he has experience as a consultant with [famous consulting company]” (1).
C3	Charles	Chris: “He is a great mentor”; “On the weekends he is not only doing general research [like Chris] but working out discussion material and presentations. . . . [The company] is his baby”; “He is inspirational and convincing” (all 1).
C4	Dean	Field note: Dean joins the team once the initial student project becomes more serious as a business opportunity. Dean was Derek’s mentor before and supported the student project as an advisor. The other team members talk with respect about him and seem happy that such an experienced person represents the venture as their CEO. Dean dominates many discussions (T). David: “He is the most experienced”; “He is the CEO—signaling to the outside world how professional we are . . . [including] business development and strategy. . . . His guidance is helping us in all aspects we are doing”; “It is a huge success that he joins our team”; “He has a clear roadmap” (all 1). David: [Reflecting on the venture’s early phase] “As a CEO . . . he was steering the venture” (2). Derek: “Do you know Dean? My mentor . . . he has done this [prestigious study program] and an MBA and worked for this well-known consulting company” (1).
I1	None	Elon: “We are a troika [team of three]”; “What I like most is being free to decide on my own”; “Each of us has some freedom to decide, to define processes or just do things as one wants. . . . That is worth a lot”; “Nobody dictates his opinions” (all 1).
I2	None	Field note: In their previous employment, Fred was Fitz’ boss for several years. Both stress that they are at the same level and do the same work, for example, software coding (T). Fitz: “We are equals now” (1). Fred: [Describing a typical working situation] “He was coding part of the script and I was coding a testing routine for it” (1).
I3	None	Field note: Both claim to be CEO of the venture (T). Garett: “I think we lead each other” (1). Grace: “I am the CEO. But he has a leadership role as well” (1).
I4	None	Hugh: “Yes, we are a soviet republic. We could start thinking about having somebody like a CEO . . . but at the moment everybody is completely autonomous in his area” (1). Harris: [Describing how they interact] “It’s a ping-pong between me, Hugh . . . and Harris” (1). Field note: They have many long discussions about lots of topics. If they do not come to a joint opinion, they can live with diverse opinions and have another discussion at a later point (T).

Team members typically described a teammate’s high attributed status with great admiration, stressing his or her influence and prominence and the respect he or she received from others. This high status triggered implicit or explicit alignment of team members’ visions with that of the high-status person. In Team C2, Bob was attributed a higher status by his teammates. When expressing their admiration for Bob, his teammates not only mentioned his superior “experience” (Bart, 1) but also emphasized his influence on their visions, describing him as a “visionary leader” (Ben, 1) who was “defining the vision” (Bill, 1). While the team did not explicitly align their visions (e.g., in a team discussion), alignment was implicit as Bob’s vision was reflected in many core business areas, and Bob led the team’s discussions and decisions based on his vision. Similarly, we found team members with high attributed status in Teams C1 (Anna) and C3 (Charles), resulting in implicit vision alignment. Team C4 was slightly different because while Dean was attributed high status by his teammates, vision alignment occurred explicitly through communication.

In contrast, we found teams in our sample in which members perceived each other as being similar in terms of their influence, prominence, and respect—that is, they did not attribute high status to any teammate. For example, Team I1 stressed that they were “a team of three” (Elon, 1) and that everyone had a certain freedom to make decisions. More pronounced, Team I4 described themselves as a “soviet republic” (Hugh, 1), in which all members were at the same “level” without any hierarchies. Interestingly, in Team I2, we also did not find differences in attributed status although one founder (Fred) was the supervisor of the other (Fitz) in their previous jobs. However, in their venture, they treated each other as equals, having the same degree of influence and responsibilities. Within these teams of equals, no member implicitly or explicitly aligned his or her vision with that of another member; thus, incongruent visions could (continue to) co-exist.

2.5.3 Entrepreneurial vision congruence and opportunity development

Exploring the consequence of team members’ vision (in)congruence, we soon realized that our interviewees tended to describe either of two different paths along which they developed their opportunities. These two paths were distinct in terms of how the team members described how often and to what extent they challenged the status quo of the opportunity, which approaches they considered and followed to implement change, and how substantial the changes in the opportunity were over time. When we analyzed the descriptions for teams with congruent visions, we found themes in our data that we labeled *focused opportunity development*. Members of these teams emphasized that they did not question the nature of the opportunity fundamentally. Rather, they talked about sticking to their plans, focusing on developing specific but not core aspects of the opportunity, and making only minor changes. Thus, we define focused opportunity development as the process of changing an opportunity infrequently and through minor adjustments without altering its fundamental nature. In contrast, members of teams holding incongruent visions told us that they frequently engaged in open discussions about potentially fundamental opportunity changes and that they adapted core aspects of their opportunities various times, taking into account multiple and seemingly unrelated development possibilities. We labeled this path *comprehensive opportunity development* since it shows some similarities to the construct of decision-making comprehensiveness, such as the consideration of multiple approaches, wide information search, and multiple decision criteria (Fredrickson & Mitchell, 1984; Miller et al., 1998). Yet, decision-making comprehensiveness insufficiently captures our

observations as comprehensive opportunity development included actual behavior (e.g., building prototypes, programming software code, physically testing hardware configurations) beyond decision making. Thus, we define comprehensive opportunity development as the process of changing an opportunity frequently and through major adjustments to alter its fundamental nature. Table 6 summarizes how vision (in)congruence triggers the pursuit of either of the two opportunity-development paths and provides illustrative quotes from the interviews.

Table 6. Opportunity development triggered by vision (in)congruence

Team	Focus of Vision	Opportunity Development	Example of Opportunity Development Triggered by Vision Congruence	Statements from Second (2) and Follow-up (F) Interviews or Triangulation Material (T)
C1	Sustainability (congruent)	Focused	<i>When sales at the service business were low, the easiest solution would have been to offer their services to companies focusing on mass market products with lower quality and price levels (e.g., their former employer where they still have a strong network). However, they decided to stick to their vision and decide for the more challenging way: offering own sustainable products, which they had planned from the beginning as a second step and now started earlier than initially planned.</i>	Anthony: “We were pragmatically looking for solutions and approaches and realized that in the medium term we had to move from service provider to new fields of business, in other words: our own products” (2). Anna: [Looking back to their planned development from providing services to providing product] “That we did not just want to be service providers but wanted products. But that was clear all the time ” (2).
C2	Exit (congruent)	Focused	<i>Understanding their technology as a means to selling the venture to an established company in their focal industry led the team to decline a lucrative offer from an automotive company since it would have made the technology less specific and thus less interesting for the potential buyers they had in mind. Also with regard to their technology, they focused on stability rather than adding new features.</i>	Bill: “We turned down several offers because we . . . had to focus. . . For instance, an automobile manufacturer . . . would have liked to do tests with us. But that would have been going into a different direction than we wanted to develop into” (2). Bart: “From a technical point of view, we finally have control over our product with regard to stability ” (2).
C3	Great exit (congruent)	Focused	<i>In line with their envisioned great exit “in the millions (Charles,1),” they focused on an algorithm-based technology that is scalable (as expected by professional investors). To improve scalability (at lower costs), they expanded their opportunity from offline to also online. Since they did not change anything at the core (e.g., their algorithms), this was just a different sales vehicle without a major change in the opportunity.</i>	Chris: “The model of business is still based on the same algorithms but it has changed because we are now [also] doing business online which reduced the costs significantly” (2). Charles: “We did a piloting concept . . . and we wasted a shitload of money on that. . . . We have to close it immediately. That is a really difficult decision to make, of course: you have put your heart into it, there are business options in there” (2).
C4	Owning a successful venture (congruent)	Focused	<i>Since they wanted to own the venture in the long term, they wanted to partner with an established company to generate recurring revenues and participate in the partner’s growth.</i>	Dean: “What was new . . . was the connection between certain methods”; [The team developed the key elements of its consulting approach based on the insights of a joint course but] “ Nothing exceeded what had been developed in the context of the [course] ” (all 2).
I1	Long-term vision for market leadership versus short-term tech vision (incongruent)	Comprehensive	<i>With their new e-paper product offering, Team I1 changed their opportunity significantly: developing a new technological solution they had not offered before and addressing a new market segment. The process of coming up with this significant opportunity change was not smooth and was characterized by long discussions lacking a congruent vision guiding them.”</i>	Evan: “For Product 1 we rebuilt the parts in our heads. . . . We envisioned a green field with nothing on it. Which parts, which mechanisms, what kind of activities do we put on it? To rebuild the radical again. . . . Partially we have learned . . . to re-envision this green field , what are we good at and in which fields of work are the skills needed?”; “In some ways that was an incredibly long discussion because it was like turning away from what we had built in the last years. Of course, we could have carried on with this or could have basically continued in [the next year] or you just decide to completely rethink it” (all 2). Elias: “So that we expanded our solution to include an e-paper [solution]” (2).

12	Creating value and selling (parts) of venture versus short-term thinking (<i>incongruent</i>)	Comprehensive	<i>Team I2 allowed their pilot customer to have significant influence on opportunity development. They even (over-)promised major changes when they were not sure that they could accomplish them. To make these changes happen, they used different technologies, which made their opportunity very complex and led to a product portfolio expansion.</i>	Fred: “In the end, promising a bit more [to the customer] than you are actually capable of doing, but still being able to go through with it, makes you drive yourself extremely far We have now implemented a kind of guerilla approach , where we make connections outside of the area of our test consumers, which we then reuse and recycle later somewhere else” (2). Fitz: “The system itself is very complex” (2). Website: By using a wide spectrum of technologies , . . . I2 has expanded its portfolio with products from the digital signage area throughout [year of Interview 2]” (T).
13	Market leadership and keeping versus exit (<i>incongruent</i>)	Comprehensive	<i>Team I3 made an extreme change in their opportunity development affecting different aspects of the opportunity, such as the target customers (private end customers → gyms as business-to-business customers) and the value proposition (developing their own videos → offering a streaming service as a technology service only).</i>	Grace: “Besides our business model changed” (2). Garrett: “At first we had planned to change the business model a little bit but because of this last company we realized how we could access this internal area and that there is nothing like it on the market” (2).
14	Tech leadership versus exit versus internationalization (<i>incongruent</i>)	Comprehensive → Focused	<i>While holding incongruent visions, the team developed two opportunities in parallel: they offered consulting services based on a simulation software and unconnected analyzing technology. Only once they had managed to hold congruent visions via a series of workshops, they decided to skip one opportunity (consulting based on the simulation software) and focused on the other.</i>	Harris: “Although we have sought two kinds of technologies so far: one simulation and one analysis technology. We narrowed our focus strategically We decided this probably on one of the strategy weekends” (2). Harold: “Initially, we had a two-products-policy . . . then it became a question of where to put the focus, because we had made two things. It was about whether or not one of the projects dies. I actually wanted to stop that but Hugh wanted to continue and then we discussed it and calculated what it costs and if we can manage the costs, if we have the personnel to do both. In the end we decided to stop it” (2).

5.3.1 Entrepreneurial vision congruence and focused opportunity development

Team C2 is an example of how vision congruence triggered *focused opportunity development*. Bill (2) described that they “turned down several offers because [they] . . . had to focus” while developing their sensor technology to realize their vision of selling the venture after becoming a key technology provider in the energy market. For example, based on their congruent vision to exit the venture, all team members agreed on rejecting a promising collaboration offer by a major automotive company because they believed that concentrating on the energy sector would make them an interesting acquisition candidate for an established energy provider. Similarly, all team members of C3 envisioned selling the company for “millions” and therefore concentrated on achieving a proof of concept for their software product. This proof of concept was key to meet the expectations of their venture capital investors, who they considered crucial for achieving the envisioned exit. The team focused on one specific market segment (supermarkets) to prove the concept of their loyalty program for retailers instead of, for example, approaching the retail market more broadly. Over time, they made only small changes to the

opportunity (e.g., lowering costs by adding an online option) that they believed would quickly enhance scalability and were consistent with their “great exit” vision (Charles and Chris, 1). Further, the congruent vision of building a sustainable firm in which they could work for a long time guided C4’s opportunity development. The key elements of the team’s approach were based on the insights of a university course they had jointly attended, but none of the added opportunity features after the course “exceeded what had been developed in the context of the [course]” (Dean, 2). The team believed in the possibility to build a quickly profitable consulting business without any substantial adaptations. The focus on one sales partner tied the team’s consulting to the partner’s own services, which continued to restrict their opportunity development over time. For Team C1, Anna (2) illustrated the relationship between congruent visions and opportunity development as follows:

The goal is always clear relatively fast. . . . It is discussed how one can reach the goal best. . . . We discuss in detail what things we do. . . . We both have a picture in mind [about] what it should look like, and we know that we need to do some things to reach it.

We found similar patterns of how congruent visions shaped focused opportunity development in additional teams from our initial sample. Team XC2’s focused opportunity development led them to “spend more time on finishing the concept” and build something “very, very well-rounded” (Walter, 2) in contrast to exploring more fundamental alternatives. These quotes illustrate how team members’ congruent visions for the venture’s future were an important starting point for shaping and developing the opportunity in a focused way over time.

5.3.2 *Entrepreneurial vision incongruence and comprehensive opportunity development*

When team members held incongruent visions, they tended to follow a *comprehensive opportunity-development path*. Typically, in their discussions (sometimes fundamentally) different options came up based on the members’ different visions, and the teams considered multiple approaches. Elias (I1, 2) described this path in the following statement:

The [team members’] different perspectives are needed. . . . We had many discussions because planning phases [for the next year] are always a comparison of the visions held by the individuals, which is not always easy for the founding team because everybody is willing to fight for his perspective.

Team I1 fundamentally changed their opportunity on purpose, and these changes reflected

various aspects of the team members' incongruent visions (i.e., market leadership, technology changes, and different time horizons). Specifically, I1 redefined key features of their cloud technology directly after our first interview round, anticipating customer concerns about the product's performance (consistent with Elon's short-term vision horizon and focus on technological progress for their current customers). Two months later, they explored new business areas and customer segments (e.g., large corporations) that they wanted to target in the next two to three years (Elias, 1; consistent with his vision of significant long-term growth resulting in market leadership). After a few months, the team developed a new e-paper solution to enter the fast-growing market of online media (consistent with Evan's and Elias' visions of market leadership and significant growth). Another month later, they entered the non-professional publishing market (again consistent with Evan's and Elias' visions). Five months later, they offered new technological features (consistent with Elon's short-term focus on technological progress). In sum, these multiple and fundamental changes illustrate how I1 comprehensively developed their opportunity.

Likewise, Team I2 made fundamental changes to their opportunities triggered by team members' vision incongruence. They forced themselves to progress with the parallel development of their software and hardware offerings for the media industry as they tried to "make connections outside the area of our test consumers, which [we] then reuse and recycle later somewhere else [in new markets]" (Fred, 2; consistent with his vision to create a valuable company that can be sold [partly] to generate personal wealth). At the same time, the short-term focus of Fitz' vision to create "several things for [their test] customer" (Fitz, 1) triggered development activities based on customer feedback in an intense phase of product changes under high time pressure. Preparing new products for reuse in new markets (consistent with Fred's vision) and regularly experimenting based on customer feedback resulted in a "very complex" (Fitz, 2) system and a "portfolio with products" (I2's website). Instead of improving one of these products, the team tried to develop new products based on new technologies, leading to a highly diverse portfolio within one year.

Grace (F) summarized I3's approach to opportunity development as follows:

It has been clear from the beginning that we did not have the same understanding, preparation, knowledge, and goal . . . and as it became more serious . . . we had a completely different understanding from what we had to deliver.

While at venture foundation, Team I3 aimed to create an online sports platform targeting private customers (consistent with Garrett's vision of building a highly scalable online business that can be sold at a high price), over the course of our study, this opportunity fundamentally changed several times, including shifts in markets, customer segments, technology, and revenue models. At the time of our second interview, I3 was striving to become a profitable business-to-business company offering services for gyms (consistent with Grace's vision (1) to become a "meta-gym" and keep venture ownership). Shortly thereafter, they also introduced a new brand for these services, reflecting a major change in the opportunity (again consistent with Grace's vision).

Our larger sample of 64 teams offers further illustration of how teams' incongruent visions triggered opportunity development. For example, while fine-tuning the prototype of XI2's initial opportunity to align with one founder's vision of building a stable e-commerce product, XI2's other team member kept pushing for multiple fundamental opportunity changes (e.g., new market, revenue model, customer segment) to benefit from the social networks trend. This team member believed that following this "hype" would lead to a quick and highly successful exit he envisioned. Eventually, Team XI2 was not able to fulfill either of the members' visions and never entered any market successfully. Thus, holding incongruent entrepreneurial visions can lead to comprehensive opportunity development including fundamental opportunity changes over time.

Importantly, our data also provide evidence that vision congruence guides opportunity development but not vice versa. Team I4's vision congruence changed over time, and subsequently, their opportunity-development path changed as well. The team started out with incongruent visions, stressing how difficult it was to define which products and markets they should pursue with these different visions. As a result, the team decided to develop two rather unrelated opportunities in parallel (consulting based on simulation software and developing an analysis software) and "in a chaotic way" (Hugh, 2). After several months of explicit vision-alignment efforts (numerous discussions and "strategy weekend trips"), they agreed on one congruent vision. From that moment onward, the team followed a highly focused opportunity-development path, as Harris (2) described:

We focus completely on the analysis technology. . . . Short term, there are incentives to sell a lot of consulting, but this keeps us from our long-term strategic vision. . . . We have to focus because it is important how we can reach that vision.

From our larger pool of teams, for XI1 the exit of a team member holding a vision differing from the other two remaining members led to vision congruence. Before the member’s exit, the team had developed an outsourcing service (for companies offering discounts to certain customer groups) and a completely unrelated cloud technology (secure data storage), but after the exit, the team concentrated on the cloud storage technology and made only slight changes over time. This additional example further substantiates our findings of how vision (in)congruence triggers different opportunity-development paths.

2.5.4 Opportunity-development paths, team behavior, and opportunity outcomes

Focused opportunity development, proactivity, and opportunity outcomes: For teams that followed a focused opportunity-development path based on congruent visions, we found that proactive behavior in the face of substantial challenges tended to facilitate opportunity commercialization. Findings from our data indicating proactive behavior closely match the definition offered by Crant (2000, p. 436) for proactive behavior: “taking initiative in improving current circumstances or creating new ones; it involves challenging the status quo rather than passively adapting to present conditions.” While taking initiative, challenging the status quo, and not staying passive are attributes frequently used to describe founders in everyday language, we found a great amount of variation between our teams in terms of proactive behavior. We provide evidence for high and low levels of proactive behavior in Table 7.

Table 7. Focused opportunity-development path and proactivity

Team	Level	Statements from Second (2) and Follow-Up (F) Interviews or from Triangulation Material (T)
C1	High	<i>Prioritizing the product line as the service business was not generating sufficient revenues</i> [Interviewer asked how they handled a large order by a big client being canceled last minute] Anthony: “The good thing is that we did not need long discussions in our team, we just follow our pragmatic approach. The first question was if we continue developing the opportunity, but that was clear very soon. We continue. And then, we pragmatically looked for alternative approaches and solutions and recognized that we need to offer our own products in the midterm. . . . What we had planned to do from the beginning. . . . Thus, the order cancelation and the lack of other orders at this time led to the start of our own product line and a new book project. So, our handling of this challenge was just pragmatic—saying “ The order gone, now we need to start our own products ” (2). <i>See Appendix 7.1.1 for another specific example: A video transcript on showing how C1 proactively found a way to hire an intern while facing a financially challenging situation</i>
C2	High	<i>Proactively starting changes in the legal structure, anticipating that this is beneficial for the next investment round</i> Bart: “We had a legal issue with our [venture] structure. We fixed it in a long process. . . . We are now looking for an investor in [six months] from now” (2). Bill: “We started implementing a holding structure when we realized that there might be tax risks. We then analyzed the risks and contacted external experts” (2).
C3	Low	<i>Evidence for a lack of proactivity when facing a challenging situation</i> Charles: [Regarding a delayed letter of intent] “Of course, that led to desperation bordering on panic on our side”; [Delayed decision by potential customers] “No, we work with minimum provisions.” (2). Chris: “At the moment we really do depend entirely on external decisions. ” (2).
C4	Low	<i>Evidence for a lack of proactivity: When there was a conflict with their only partner (software house) about their contract, they did not actively propose alternative clauses nor did they realize soon enough the need for an alternative partner (which would have been legally possible and—since there were various companies similar to the software house—not unrealistic). Instead, they waited passively and eventually terminated the opportunity (and thereby the venture).</i>

Derek: “We had so many things which were still open, **which we could not influence, which were driven externally**, especially the point [with the partnering software house] where things went up and down all the time. . . . And then on the weekend, I reached the decision that it does not make any sense to continue like this. . . . I would have to scale more slowly. So I would not hasten things as much” (2).
David: “For Derek it must have been like freedom. . . . I think he felt that **pressure** [by the partner] most of all” (2).

While those sample teams with congruent visions (pursuing focused opportunity development) that approached threatening challenges with little proactivity terminated their opportunities and ventures (C and C4), those that did show proactive behavior successfully moved their opportunities toward commercialization (C1 and C2). Specifically, when C1 faced unexpectedly low revenues from their service business, the team members proactively decided to initiate their product business almost one year earlier than initially planned. Although this decision did not change the fundamental nature of the opportunity, the team’s flexibility was an important prerequisite for commercialization. C1’s proactive behavior also became obvious during the videotaped team meeting (see Appendix 7.1.1 for an excerpt) in which the team proactively identified a rather untypical solution to address potential financial problems: they decided to try hiring an intern who they could share with another venture to minimize costs.⁷ Similarly, Team C2 successfully handled a challenging situation when they tried to transform the venture into a holding structure. The team decided to proactively tackle the issue themselves instead of waiting for others (e.g., their investors) to propose a new structure. This solution was highly relevant for aligning their opportunity with their visions. The challenge occurred as they crafted the business plan for potential new investors who they considered important for the envisioned later exit. By shifting their strategic attention toward solving the venture’s legal issues for “a long time” (Bart, 2) while flexibly slowing down technical development, C2 could close the next financing round without further legal adaptations. C2’s videotaped team meeting shows how team members were highly proactive in their search for potential alternatives regarding various challenges, such as incentivizing (future) key employees when higher direct compensation was not an option, or hiring IT students for development tasks in a highly competitive recruiting market with limited financial resources.

In contrast to the teams in the focused opportunity-development path that commercialized their opportunities, C3 and C4 terminated their opportunities, which led to venture failure. A key challenge emerged for C3 when they waited for a letter of intent from their focal customer for

⁷ Hiring an intern for a 50% position would lead to higher costs for their venture because of associated social security costs. Moreover, the most skilled candidates typically prefer full-time positions (which are sufficiently available in the local job market). Thus, sharing an intern with another venture was a smart choice for C1’s situation.

several months, but instead of proactively approaching other potential customers or partners, Charles (2) described their reaction as follows: “We are basically just sitting there, waiting for investors and for [key potential customers] to make a move. At the moment, we have no stress.” Their congruent visions reinforced their narrow focus on this customer. We also found evidence for C3’s lack of proactive behavior in the videotaped team meeting. While the opportunity’s success was already threatened, the founders discussed unimportant operational aspects, such as ending a magazine subscription, but neither took initiative to prevent the opportunity from failing (e.g., by looking for new investors and/or customers) nor proactively explored a new business idea they had in the meeting. Similarly, C4 faced a major threat when a contract was due for signing and their only potential partner demanded certain clauses on liability and copyright not acceptable for C4. Instead of proactively looking for a new partner or intensifying negotiations with the existing partner to explore alternative legal options, the team felt helpless and stayed passive, as Derek (2) summarized: “We had so many things which were still open, which we could not influence, which were driven externally.” Since the team’s congruent visions led to a strict focus on this one partner, C4 decided to terminate the opportunity altogether, resulting in venture failure.

We found further confirmatory cases in our initial sample of 64 teams that illustrate how low levels of proactive behavior can result in opportunity termination. For example, Team XC2 kept fine-tuning their concept of a restaurant franchise over months, which resulted in a cash crisis that forced one founder to go back to his prior consultancy job. His teammate kept working on the venture, but instead of proactively looking for initiatives that could improve the venture’s financial situation, such as looking for investors or generating first revenues quickly (e.g., via a food truck or catering services), the team’s congruent vision led the remaining teammate to further fine-tune minor details of the concept (e.g., layout details for marketing materials). In the end, not being ready for market entry was a major reason for the venture’s shut-down. Consistent with these observations, it appears that founding teams following a focused opportunity-development path based on team members’ congruent visions require high levels of proactive behavior to move their opportunity toward commercialization in the face of major challenges.

Comprehensive opportunity development, professionalism, and opportunity outcomes: Teams pursuing the comprehensive opportunity-development path based on the team members’ incongruent visions were typically confronted with high levels of complexity. We observed that achieving positive opportunity outcomes was shaped by differences in the teams’

established structures (Blatt, 2009), roles (Sine, Mitsuhashi, & Kirsch, 2006), routines (Feldman & Pentland, 2003), and processes (Feldman & March, 1981); elements which indicate the venture’s level of professionalization (Zott & Huy, 2007). Consistent with our observations, we thus define professionalism as the team’s establishment and usage of clear internal structures, processes, and routines for both day-to-day business as well as unforeseen events that are internal (e.g., team conflict) or external (e.g., challenging customer behavior) to the team. In contrast to formalization (Pugh et al., 1963), in our sample cases we observe that professionalism does not require to capture structures, processes, and routines *in writing*; rather, our findings emphasize actual team behavior. Table 8 provides evidence of the teams’ professionalism.

Table 8. Comprehensive opportunity-development path and professionalism

Team	Level	Statements from Second (2), and Follow-up (F) Interviews
I1	High	Evan: “Decision making is a very factual and analytical process for us”; “This professionalization is strongly characterized by rapidly improving the decision-making process, documenting in a way that is better and more easily traceable” (2). Elias: “Internally we professionalized the structures because we have now introduced a structure to the project and we have also systematized and structured the planning process ”; “We have basic decision-making templates . . . in writing ” (2). Elon: “We had a planning session every two to three weeks with Mary who, as an assistant, took the minutes” (2).
I2	High	Fred: “It is an extremely plain process, extremely structured , focused discussion of the pros and cons . . . that is how we form the decision together” (2). Fitz: “We sit down together very strictly and regularly on Mondays . In order to a) reflect on things and b) talk about what is coming up that week. After Phase 1, we also spent one session on looking ahead one year, rather strategically” (2). <i>Further evidence in videotaped team session: Structured meeting with review of the status quo of defined tasks and planning of next steps</i>
I3	Low	<i>Evidence for lack of professionalism</i> Grace: “Yes, we have a planning list . . . but we do not take it seriously For example, we have an Excel table with different product versions . . . and deadlines. And who needs to do what. But the list is almost never updated . The list gets updated when I request it. Then, Garrett does the update. But after some months . . . the list is not updated—again. And then everything repeats itself”; “And then I realized that he feels like he does not get all of the information . [When conflicts arise] Things heat up quickly” (all 2).
I4	High	Hugh: “Now, we approach everything in a more structured way, for example, the cash flow planning, the project planning and similar things” (2). Harold: “The biggest challenge has been to manage the recruiting [process], structure the whole thing [the venture], and then to decide in which direction to go and how to organize that” (2). Harris: [When conflicts between marketing and technical teams occurred] “We have set up a development process in which features can be defined . . . it’s a very grown-up working mode now”; “We managed to define clear responsibilities and we aim to make our work more productive and better” (all 2).

Elias (2) summarized how team I1 had developed high levels of professionalism: “Internally, we professionalized the structures . . . and we have also systematized and structured the planning process.” This professionalized process included joint planning sessions “every two or three weeks” (Elon, 2) to master upcoming challenges. I1’s videotaped meeting provides another example of how the team behaved professionally when terminating several projects they had started based on their incongruent visions. To maintain high employee motivation and productivity levels for the upcoming months, the founders evaluated their project portfolio as described in the excerpt presented in Appendix 7.1.2 by discussing whether they wanted to start a follow-on project based on the results of a previous project. Professionalism became

evident in the team's preparation (e.g., all founders had a printed project overview), the presentations themselves (e.g., they invited the employee responsible for the project to join the meeting and present it), the evaluation phase (e.g., the discussion was driven by numbers and facts they always used to assess projects), and the actual decision (e.g., the decision was clearly worded in the minutes with next steps to facilitate planning, key metrics to reach, and a timeline for the project's structure). This professionalism enabled the team to plan specific next steps although their incongruent visions suggested multiple alternatives due to comprehensive opportunity development.

Similarly, I2 followed clear routines in their team interactions and decisions. For example, one important routine was holding regular weekly meetings in which they planned the following week and assessed their performance. In addition, they conducted "one session on looking ahead one year, rather strategically" (Fitz, 1) to ensure they had a long-term plan in place. In the videotaped team meeting, the founders showed high professionalism when for an important project, the client's counterpart was not responsive enough, and the success of the project was at risk. Since they did not believe that confronting the client's counterpart with the problem would be successful, they discussed a broad set of measures to improve the situation. After collecting a list of ideas, they evaluated them and eventually decided on a combination of measures to address the issue (i.e., installing new project management) while improving their relationship with the client's counterpart (i.e., allowing him to claim the idea). To ensure success, they agreed on pre-discussions with other clients to better understand the political environment and prepare a list of concrete next steps. Thus, I2's professionalism allowed them to converge on a decision despite the team members' incongruent visions.

In contrast, teams low in professionalism lacked clear processes and routines, resulting in opportunity termination (i.e., venture failure). For example, I3's team members had no regular team meetings and usually did not work in the same office but from home. Moreover, they did not manage their planning process well, as Grace summarized (2): "We have a planning list . . . but we do not take it seriously." Eventually, delays led to opportunity termination and venture failure. Similarly, XI2 aimed to meet once a week for planning and alignment purposes but did not realize this plan on a regular basis, resulting in little information exchange between the team members. The resulting product changes were random and were not properly planned, resulting in opportunity termination and venture failure. Taken together, these findings indicate that teams following a comprehensive opportunity-development path based on incongruent

visions between team members require high professionalism to commercialize their opportunities.

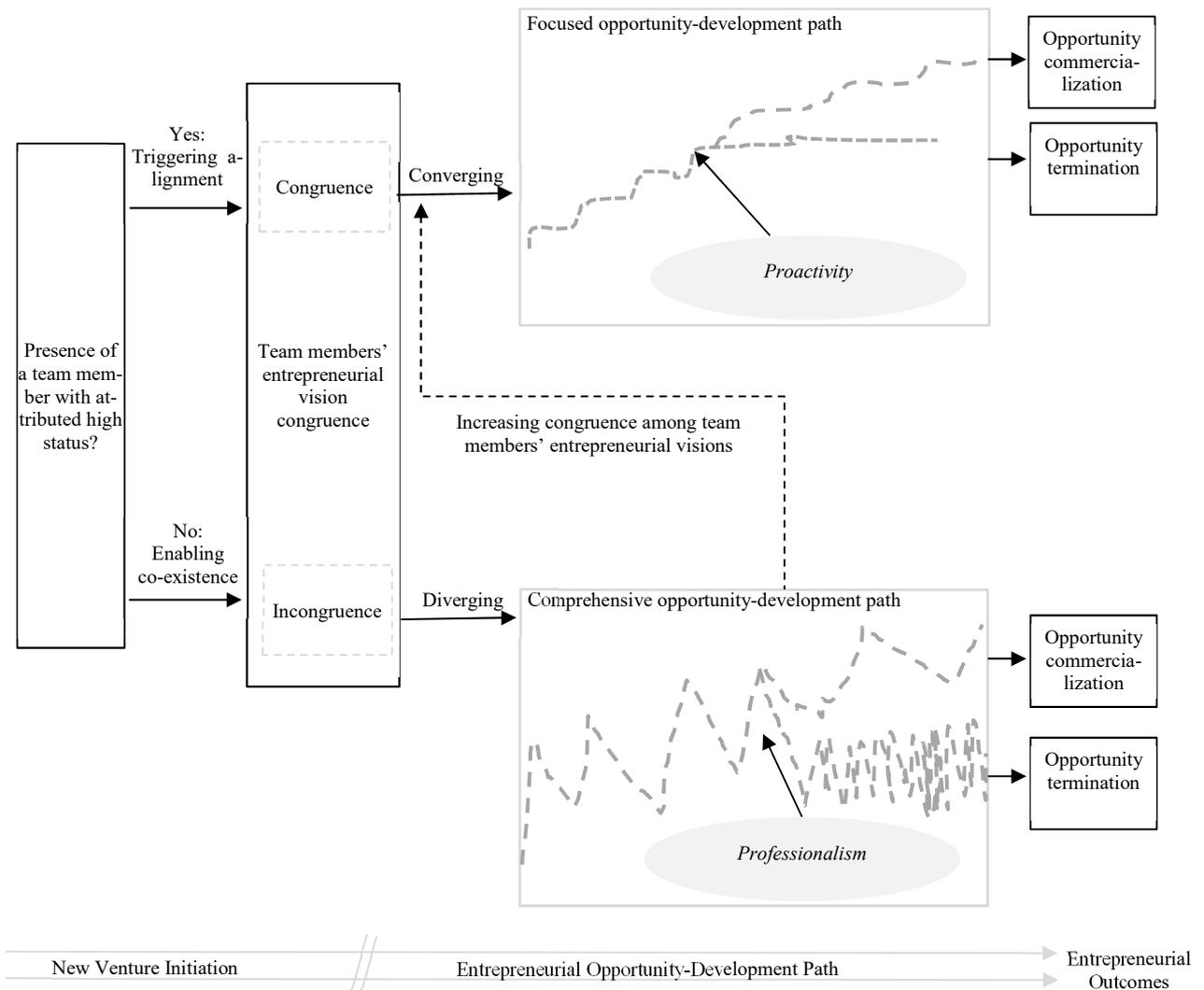
Finally, at the beginning of our study, Team I4 followed the comprehensive development path and managed the challenges of developing two opportunities in parallel because of their high professionalism. For example, Harold reflected (2), “Of course, in the beginning we were a bit less organized. Things developed so that we have a relatively well-developed decision-making system by now, and everybody knows what the strategy is and knows in which kind of framework they can make their own decisions.” The team also established routines and structures around the topics of “cash-flow planning [and] project planning” (Hugh, 2), which helped them manage the complexity resulting from developing two opportunities in parallel. Once the team’s vision congruence increased resulting in the decision to work on only one opportunity following the focused path, team members maintained their professionalism, but our data did not indicate that this professionalism was as crucial for moving the opportunity forward.

2.5.5 A model of founding team vision congruence and opportunity development

Our inductive data analysis gave rise to the model depicted in Figure 2. Team members’ *vision congruence* emerged as a key construct influencing two different opportunity-development paths and was facilitated by *the presence of team members with high attributed status*. Congruent visions within the founding team triggered a *focused opportunity-development path* in which the team remained focused on the initial opportunity and adjusted it gradually over time. In contrast, teams with members holding incongruent visions tended to follow a *comprehensive opportunity-development path* in which the team considered multiple and diverse alternatives, leading to fundamental changes over time. *Proactivity* (for focused opportunity development) and *professionalism* (for comprehensive opportunity development) explained how both paths of can lead to opportunity commercialization or termination (i.e., venture failure). Finally, teams⁸ could change from holding incongruent visions to holding congruent visions over time, which then triggered a change in the opportunity-development path.

⁸ To challenge the model, we went back to our initial sample and analyzed the 28 remaining cases. We found additional eleven cases following the vision congruence-focused opportunity-development path and ten cases following the incongruent vision-comprehensive opportunity-development path. For the remaining seven cases we see a tendency but cannot provide a clear assessment because of the lack of specific information on some of our constructs for (some of) the founders.

Figure 2. A model of founding team members' entrepreneurial visions, opportunity development, and opportunity performance



2.6 Discussion

Based on an inductive longitudinal study of eight founding teams, our study suggests a novel, content-based perspective on entrepreneurial vision at the individual and team level. We also identify both antecedents and outcomes of vision (in)congruence at the team level. These findings have important implications for the literatures on entrepreneurial vision and teams, and the upper echelons literature more broadly.

2.6.1 Entrepreneurial vision at the individual level

Previous literature (Baum & Locke, 2004; Reid, Anglin, Baur, Short, & Buckley, 2017; Ruvio et al., 2010) has conceptualized entrepreneurial vision from a leadership perspective trying to explain how a venture's organizational vision motivates followers. While this literature which has described a venture's organizational vision in terms of attributes like inspirational (Sosik & Dinger, 2007), timeless (Berson et al., 2015), or far-reaching (Berson et al., 2015), our inductive study based on rich qualitative data reveals actual content dimensions of entrepreneurial visions such as growth, internationalization, values, and ownership. These content dimensions suggest that entrepreneurial vision does not only capture a future-oriented image of the venture, but also the *founder's personal vision*. While entrepreneurial visions can include several content dimensions, they often revolve around one dominant dimension. Understanding these content dimensions is important since, as we explain below, they have far-reaching implications for the venture team and the venture's future development trajectory.

In particular, our study reveals future ownership as one important content dimension of entrepreneurial visions that reflects the founder's personal relationship with the venture. However, we find that ownership is not the only personal content dimension that reflects the relationship between founder and venture. Instead, the founder's relationship with his or her venture is also revealed in other dimensions even if they refer to the organization. For example, in our sample organizational values included in the vision reflected founders' personal values, technological leadership reflected founders' technological backgrounds, high-profit orientation reflected founders' desires for short-term personal wealth, and the visions' time horizons reflected founders' beliefs in the value of long-term planning. While the emphasis on the founder—venture relationship as compared to organizational content dimensions varied between entrepreneurial visions, it was clearly visible in all visions, consistent with the view that “entrepreneurs envision their venture strategically as an extension of themselves and their needs” (Ruvio et al., 2010, p. 145). Thus, our study suggests a conceptualization of entrepreneurial visions that is distinct from a pure focus on organizational visions by including key dimensions that are personal but not organizational (e.g., venture ownership) and represent the founders' personal past (i.e., experiences, background), present (i.e., role, preferences), and future (i.e., desires, plans). We offer the following definition:

Definition: *An entrepreneurial vision is a founder's future image of the venture including his or her personal relationship with it.*

Surprisingly, and in contrast to the leadership perspective, we find that founders often purposefully do not communicate their entrepreneurial vision to teammates and stakeholders in order to avoid potentially negative consequences. For example, an entrepreneurial vision of selling a venture in the future might demotivate employees and external stakeholders because it indicates that the venture may cease to exist after being acquired. Thus, fully understanding the role of communicating an entrepreneurial vision (or parts thereof) to others requires a consideration of both organizational and personal content dimensions from the founders' perspective.

2.6.2 Entrepreneurial vision at the team level

The novel definition of entrepreneurial vision provides the basis for a new perspective on entrepreneurial visions in a team context. Specifically, our study illustrates that founding team members may hold different entrepreneurial visions. The content of these different visions can be overlapping or compatible such that all team members' visions can be realized within the venture. However, it is also possible that team members' visions are incompatible such that they cannot easily be realized within the same venture. Surprisingly, our data also show that it is not uncommon that different entrepreneurial visions co-exist in venture teams over an extended time period although these visions are incompatible. This co-existence of several entrepreneurial visions is in sharp contrast to prior research, which has assumed that there is *one* vision for the venture either defined by one (lead) entrepreneur (Baum et al., 1998; Kirkpatrick et al., 2002; Ruvio et al., 2010) or collectively developed by founding team members (Ensley et al., 2003). Based on these observations, we offer the following definition:

***Definition:** Entrepreneurial vision congruence is the extent to which entrepreneurial visions held by founding team members can be realized simultaneously within the same venture.*

2.6.3 Emergence and outcomes of entrepreneurial vision (in)congruence

Our study finds that the existence of vision congruence and its consequences do not necessarily depend on vision-related communication. This is in contrast to prior work on visions in a team setting, which has suggested that communication processes are an important antecedent for developing shared visions. Specifically, shared visions are either set by a leader (Shamir et al., 1993) or collectively discussed by a team (Pearce & Ensley, 2004). Moreover, prior research on firm performance feedback (Greve, 1998, 2003) has suggested that decision makers in firms

performing worse than their competitors engage in more strategic discussions (Kim, Finkelstein, & Haleblian, 2015) suggesting that low firm performance could trigger a debate on visions in team and increase vision congruence. However, our data do not support the assumption that prior firm performance has an impact on vision communication and congruence in our founding teams. Thus, our findings challenge prior research on the need to communicate visions in the team to develop congruent visions which, in turn, increase performance. Our findings also do not support the idea that team members with similar visions are attracted by each other (Leung et al., 2006) as we show that founding team members holding incompatible visions can work together successfully while their incompatible visions could co-exist over time. Rather, crucial for the emergence of vision congruence was the presence of a team member with high attributed status (C. Anderson et al., 2001). While work on visions in teams has neglected to the best of our knowledge this potential trigger, our finding is consistent with the idea that status differences facilitate intrateam coordination (H. van Dijk & van Engen, 2013). Future research could focus on the interplay of status, vision, and coordination to further contribute to our understanding of how entrepreneurial visions emerge in a team – a topic scholars have claimed to be both important and under-researched (Klotz et al., 2014).

Our study also reveals a novel way of how entrepreneurial visions impact venture development. In contrast to a leadership perspective on visions, our conceptualization including the founders' personal relationship with the venture suggests that the impact of entrepreneurial visions goes beyond a potential motivating effect for employees and other stakeholder but also directly shapes opportunity development as one of the most central processes in new ventures (Dimov, 2007). While congruent visions within a team trigger focused opportunity development, incongruent visions trigger comprehensive opportunity development. That is, teams holding incongruent entrepreneurial visions seem to approach opportunity development more broadly and more openly than teams holding congruent visions. Theoretical work (Gioia, Nag, & Corley, 2012) has suggested that ambiguous organizational visions can support strategic change because stakeholders are less committed to an ambiguous vision than to a clearly defined vision. Perhaps founding teams whose members hold incongruent visions representing different trajectories for their ventures are also less committed to one overall organizational vision than teams with congruent visions, facilitating comprehensive (instead of focused) opportunity development. Thus, extending previous studies on pivoting and the role of external feedback in opportunity development (Grimes, 2018), our study identifies entrepreneurial vision congruence is an important yet so far unrecognized team-*internal* trigger of opportunity development.

Finally, we do not find a direct association between entrepreneurial vision congruence and successful opportunity commercialization; rather, in challenging situations congruent and incongruent visions require specific team behaviors for either opportunity-development path. Engaging in focused opportunity development appears to require high levels of proactivity in tackling threatening challenges; less proactive teams are more likely to struggle with challenges and tend to terminate their opportunities (resulting in venture failure). In contrast, teams following the comprehensive opportunity-development path can successfully commercialize their opportunities when they act professionally in challenging situations and employ clear internal structures, processes, and routines in their day-to-day business and in the face of unforeseen events. To some extent, this finding is surprising given prior studies' emphasis of the benefits of developing a shared vision (implying high vision congruence) within the entrepreneurial team for achieving high performance (Baum & Locke, 2004; Kroll et al., 2007). For future theorizing and empirical work, these findings suggest that the outcomes of entrepreneurial visions in a team setting cannot be understood without an exploration of the team processes that are applied to implement these visions, in particular, when challenging situations for the team arise.

2.6.4 Vision (in)congruence and upper echelons theory

Our study introduces vision incongruence as a novel type of management team heterogeneity. We contribute to upper echelons research by integrating more complex underlying indicators of team heterogeneity than the typically explored observable demographics (Jin et al., 2017; Ndofor et al., 2015). However, this increase in complexity also necessitates collecting data from all team members individually instead of using a key informant approach. Indeed, recently scholars have criticized previous upper echelon research for neglecting interactions within the top management team (Bromiley & Rau, 2016). Our study illustrates how personal data from all team members can lead to novel insights into the role of team heterogeneity of which team members might not even be aware. Moving forward, developing a measurement for vision congruence capturing individual management team members' (personal) visions might open up interesting research avenues for upper echelon scholars.

Previous upper echelons studies on the influence of individuals within teams have mainly focused on CEOs' status as defined by their formal role (e.g., Park, Westphal, & Stern, 2011).

By assessing status as attributed by other team members we show how *perceived* status and heterogeneity rather than formal roles (Park et al., 2011) or external status attributions (He & Huang, 2011) trigger team processes and outcomes. Specifically, our study reveals an interconnection between different types of heterogeneity because *heterogeneity* in status shapes *homogeneity* in team members' visions. These findings suggest that future theorizing on upper echelons might focus on mutual dependencies between different heterogeneity types within management teams and that a perceptual approach to capturing heterogeneity has the potential to provide novel insights.

2.6.5 Limitations and future research

As all case study research, our findings are limited in their generalizability. Future research should test the proposed relationships between team members' entrepreneurial vision congruence, opportunity-development paths, team behavior, and opportunity outcomes in a larger sample. Second, an important avenue for future research is to include different types of founders and ventures. While we rely on a relatively homogeneous sample of ventures to rule out alternative explanations for our findings, other dimensions of entrepreneurial visions will include pro-social values for social entrepreneurs (Dacin, Dacin, & Tracey, 2011), exit intentions for serial entrepreneurs (DeTienne et al., 2015), and financial security for necessity entrepreneurs (Block, Sandner, & Spiegel, 2015). Further, factors influencing both entrepreneurial vision content or congruence may include characteristics of the individual founder (e.g., educational or functional background, achievement orientation or ambition), team behavior and processes (e.g., team communication, faultlines), and venture level factors (e.g., initial performance, special events). Future quantitative studies should explore these potential antecedents. While outside the scope of our study, future research could also explore the evolution of entrepreneurial visions as ventures mature. For more mature ventures serving larger and more diverse stakeholder groups, organizational visions seem to play an important role (Baum et al., 1998; Kirkpatrick et al., 2002). How do founders develop organizational visions from their personal entrepreneurial visions?

2.6.6 Conclusion

Our inductive study suggests that entrepreneurial visions capture founders' future image of their ventures including their personal relationship with these ventures. We illustrate how team members' vision congruence emerges in the case of one team member is attributed high status by teammates. We also show how vision congruence impacts ventures' opportunity-development path. Studying entrepreneurial visions in a team context requires a content-focused, dynamic perspective and the consideration of team processes for implementing entrepreneurial vision for successful opportunity commercialization. We hope these findings stimulate further research on entrepreneurial visions and their impact on new venture.

3 Essay II: Information Reliability and Team Reflection as Contingencies of the Relationship between Information Elaboration and Team Decision Quality⁹

Although previous research has found a positive relationship between information elaboration and team decision quality if team members possess diverse information, we know little about the boundary conditions of this relationship. In this study, we provide a more nuanced understanding of these boundary conditions by focusing on team-external and team-internal contingencies. Based on a sample of 52 student teams working on a decision-making task, we find a complex three-way interaction between information elaboration, information reliability, and team reflection in explaining team decision quality. The relationship between information elaboration and team decision quality was not significant when teams were confronted with unreliable information independent of their level of reflection. However, for teams confronted with reliable information, the relationship between information elaboration and team decision quality was positive for low levels of reflection but negative for high levels of reflection. Our results provide important implications for our understanding of information elaboration, team reflection, and the context of team decision making.

3.1 Introduction

Successful team decision making requires that teams make use of diverse information distributed among their members (Homan, van Knippenberg, van Kleef, & De Dreu, 2007; van Knippenberg et al., 2004). Capitalizing on diverse information, however, is not easy, and many teams fail to do so, which often leads to poor decision outcomes (Mell, van Knippenberg, & van Ginkel, 2014; Schulz-Hardt et al., 2006; Stasser & Titus, 1985). In particular, in “tasks with a strong information-processing or decision-making component” (Guillaume, Dawson, Otaye-Ebede, Woods, & West, 2017, p. 279) information elaboration—exchanging, discussing, and integrating information in the team (van Knippenberg et al., 2004)—is a key contributor to decision quality (Nederveen Pieterse, van Knippenberg, & van Ginkel, 2011; Rico, Sánchez-Manzanares, Antino, & Lau, 2012; van Knippenberg, Kooij-de Bode, & van Ginkel,

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2010). As a consequence, a growing body of research has identified antecedents of information elaboration, such as requests for team members to share domain-specific information (Mell et al., 2014), collective leadership and similarity in team members' mental models (Resick et al., 2014), and team members' task representations (van Ginkel & van Knippenberg, 2009, 2012).

However, although we know that information elaboration is crucial for teams to integrate members' diverse information to make good decisions, research has just started to explore the conditions under which information elaboration is more or less conducive to team decision quality. This is an important research topic because information elaboration requires the team's time and effort (Hoever et al., 2012; Resick et al., 2014), so a better understanding of the relationship between information elaboration and decision quality can inform teams when these investments are most likely to pay off. For example, Gardner et al. (2012) suggested that teams particularly benefit from processing information in uncertain tasks and Resick et al. (2014) found that information elaboration is more beneficial for team performance in turbulent than in stable environments.

Although these studies suggest that the task environment is an important contingency of the relationship between information elaboration and decision quality, a recent review noted that "the effect of information properties on team decision making has received little research attention" (Sohrab et al., 2015, p. 500). Specifically, many teams need to make decisions in situations in which the available information is unreliable—that is, the trustworthiness of the information is uncertain (Chancey & Bliss, 2012; Low & Mohr, 2001). For example, information reliability is often low in highly novel contexts where the information's trustworthiness can simply not be assessed (Lee, Chen, & Hartmann, 2016) and in dynamic contexts where available information is quickly outdated (Stieglitz, Knudsen, & Becker, 2016).

Moreover, because teams switch during team decision making between action processes (i.e., activities teams engage in to directly work toward their goals, such as information elaboration; Marks et al., 2001) and transition processes (i.e., time periods of evaluation and planning that guide the accomplishment of team goals; Marks et al., 2001), analyzing the interplay between these processes has the potential to contribute to a more holistic understanding of what teams do to integrate the diverse information available to their members. We follow the suggestion by Schippers, Edmondson, and West (2014) that team reflection—a transition process described as thinking about and adapting team objectives and processes (M. A. West, Garrod, & Carletta, 1997)—supports teams' information processing under challenging conditions, such

as unpredictable environments (Chen, Bamberger, Song, & Vashdi, 2018). Thus, we expect an interplay between information elaboration, information reliability, and team reflection in explaining team decision quality. Specifically, our study addresses the following research question: to what extent do information reliability and team reflection impact the relationship between information elaboration and team decision quality?

To explore this question empirically, we rely on a sample of 52 three-person teams confronted with a hidden profile task (Hoever et al., 2012; Schulz-Hardt et al., 2006; van Ginkel & van Knippenberg, 2008) for which we experimentally manipulate information reliability. Our findings show that team reflection is an important contingency influencing the extent to which teams incorporate reliable or unreliable information that is elaborated within the team in their decision making.

Our study makes the following primary contributions. First, although previous research has often assumed that information elaboration is beneficial when diverse information is distributed across team members (Mell et al., 2014; Nederveen Pieterse et al., 2011; van Knippenberg et al., 2004), we theorize and find that the benefits of information elaboration depend on a combination of environmental conditions and concomitant team processes. Thus, we contribute to previous work on information elaboration by including important team-internal and team-external contingencies illustrating that under some conditions information elaboration can be beneficial, irrelevant, or even detrimental to team decision quality. Second, although we know surprisingly little about how the properties of the information to be elaborated impact the outcomes of team decision tasks (Sohrab et al., 2015), previous research has (often implicitly) assumed that teams can be certain about the available information's quality. The few exceptions to this assumption (Littlepage, Perdue, & Fuller, 2012; Steinel, Utz, & Koning, 2010) have manipulated the quality of individual information items to understand how teams deal with items differing in importance for their team decision. By exploring how properties of entire information sets (in terms of either high or low levels of reliability, i.e., differences in the teams' certainty about the information's trustworthiness) impact team decision quality, our study extends previous insights into the external team environment's influence on team performance (Resick et al., 2014). Finally, we contribute to work on team reflection in team decision making (De Dreu, 2007; Gurtner, Tschan, Semmer, & Nägele, 2007; van Ginkel & van Knippenberg, 2009) by illustrating that although team reflection can compensate for a lack of the elaboration of reliable information, under conditions of high team reflection, intense information elaboration can decrease team decision quality. Thus, this study provides novel insights

into the interplay of team action and transition processes in different team decision-making contexts.

3.2 Theoretical background and hypotheses

Drawing on extant research (Homan et al., 2007; Mell et al., 2014; van Knippenberg et al., 2010), we assume that information elaboration is related to team decision quality when team members possess diverse information, and we focus on the contingencies of this relationship. First, we theorize about how a lack of information reliability increases the importance of information elaboration. Second, we explain how team reflection shapes the team's potential to benefit from the elaboration of reliable or unreliable information.

3.2.1 Information elaboration and decision quality

To understand why some teams are able to benefit from diversity and thus from diverse information distributed across team members, van Knippenberg et al. (2004) developed the categorization-elaboration model. The model suggests that diversity can stimulate information elaboration in teams—that is, “the exchange of information and perspectives, individual-level processing of the information and perspectives, the process of feeding back the results of this individual-level processing into the group, and discussion and integration of its implications” (van Knippenberg et al., 2004, p. 1011). Thus, information elaboration is a process in which team members explain their own ideas, thoughts, and opinions; come to know those of other team members; discuss differences and commonalities in the information available to them; and, in doing so, integrate their idiosyncratic knowledge (Hoever et al., 2012; Rico et al., 2012). If the task requires the team to pool and process diverse information available to its members, information elaboration is needed to increase team performance (Guillaume et al., 2017; van Knippenberg et al., 2004). Indeed, information elaboration was found to support teams in making better decisions based on diverse information (Rico et al., 2012; van Ginkel & van Knippenberg, 2008; van Knippenberg et al., 2010), to translate diverse perspectives into higher levels of creativity (Hoever et al., 2012), to draw on age and educational diversity to improve individuals' performance in knowledge-based innovation tasks (Kearney, Gebert, & Voelpel, 2009), and to capitalize on the team's cultural diversity under a high learning approach

orientation (Nederveen Pieterse, van Knippenberg, & van Dierendonck, 2013). Thus, information elaboration can be classified as an action phase process that reflects “periods of time when teams are engaged in acts that contribute directly to goal accomplishment,” such as achieving a high-quality team decision (Marks et al., 2001, p. 360).

More recently, research has started to develop a more sophisticated understanding of the conditions under which information elaboration is more or less conducive for team performance. For example, Resick et al. (2014) found that turbulent environments impose specific challenges on teams because unexpected events in these environments make effective team coordination more difficult and, at the same time, require novel strategies to cope with the challenges. It is under such environmental turbulence that information elaboration is likely crucial for team performance. In contrast, in stable environments, the decision-making challenges are low such that extensive information elaboration is irrelevant to performance because it consumes the team’s resources while providing few benefits to team coordination. Further, Gardner et al. (2012) analyzed the impact of an uncertain task environment and argued that teams need to show higher levels of information elaboration to achieve high levels of team performance despite the impeding effect of uncertainty on the team.

By taking into account the environment in which team decisions take place, the studies described above (at least implicitly) incorporate the nature of information available to the team. Other studies have directly manipulated properties of individual information items. For example, these studies have shown that items presented in a more salient way are more likely to be discussed within the team than less salient items (Schittekatte & Van Hiel, 1996; Stewart, Stewart, Tyson, Vinci, & Fioti, 2004). Moreover, in collaborative settings, team members have been found to more frequently share information items that are labeled important with their teammates (Littlepage et al., 2012; Steinel et al., 2010). In contrast, in competitive settings, team members are less likely to share information items labeled as important than information items that are labeled to be unimportant (Steinel et al., 2010). Although these findings are crucial for understanding which information items team members will attend to out of a set of items of different quality, they do not provide insights into situations in which the quality of the teams’ entire information set is uncertain—that is, conditions of high or low information reliability.

3.2.2 Information elaboration, information reliability, and decision quality

In modern business environments characterized by increasing levels of dynamism (Stieglitz et al., 2016), teams are likely to be confronted with situations in which they are “lacking sufficient information to predict accurately” (Milliken, 1987, p. 136); thus, they cannot be sure about the quality of their information. Specifically, they might need to deal with unreliable information, that is, the trustworthiness of the information is uncertain (Chancey & Bliss, 2012; Low & Mohr, 2001; E. van Dijk & Zeelenberg, 2003). It is important to note that information reliability and information accuracy are related, yet different constructs. Specifically, although individuals may receive accurate information, this information can be presented in a way that they cannot be sure about its trustworthiness; thus, they perceive it as unreliable (Chancey & Bliss, 2012; Low & Mohr, 2001; Remus, O'Connor, & Griggs, 1995). For example, teams who receive information from expert sources that engage in careful planning and present solid evidence can be highly certain that this information is trustworthy (high reliability; Lee et al., 2016). Alternatively, teams can be confronted with the same information but based on guesses and rumors, resulting in uncertainty if the information is trustworthy (low reliability; Dubois, Rucker, & Tormala, 2011). We expect that the reliability of the available information will influence how information elaboration is translated into team decision quality. Specifically, information elaboration is likely to be more beneficial for team decision quality when the information available to the team is unreliable than when it is reliable.

First, compared to reliable information, individuals are less likely to draw on unreliable information for their decisions or discount it if they do use it (Low & Mohr, 2001; E. van Dijk & Zeelenberg, 2003). Thus, team members will have difficulties in effectively drawing on their own and their teammates' unreliable information to reach high-quality decisions. However, these difficulties might be overcome—at least partly—by more extensive information elaboration of the unreliable information at hand. If the team members scrutinize the unreliable information available to them and process it carefully, they will be able to focus on the information needed for their task and realize how they can benefit from the available information despite low reliability. In contrast, reliable information will more “speak for itself,” which reduces the task's complexity and uncertainty and thus reduces the need for extensive information elaboration to achieve high team performance (Gardner et al., 2012; Resick et al., 2014).

Second, individuals appear to have difficulty combining and integrating unreliable information items into a coherent understanding of their current situation (Ma & Kaber, 2007; Remus et al.,

1995). However, sharing and communicating this information extensively with others in the team may facilitate integration and hence the development of a more coherent idea of the overall information set available to the team. In particular, when teams work on a task that is connected to a lack of predictability, careful processing and integration of information is crucial for team performance (De Dreu & Beersma, 2010; Sung & Choi, 2012). In contrast, if the information is reliable, it will be easier for the team to conceive how members' information items fit together and recognize patterns embedded in the information available to the entire team. In these situations, information elaboration is less crucial for high team decision quality. Based on the above reasoning, we offer the following hypothesis:

Hypothesis 1: Information reliability moderates the positive relationship between information elaboration and team decision quality such that the relationship is stronger for unreliable than for reliable information.

3.2.3 Information elaboration, information reliability, team reflection, and decision quality

Although we have argued above that the characteristics of the information will moderate the relationship between information elaboration and team decision quality, we have assumed that the teams are able to translate their available information into high levels of decision quality. Research indicates, however, that team processes beyond information elaboration might influence how teams benefit from processing information (Sohrab et al., 2015). Thus, we suggest that these additional processes can provide important boundary conditions for the effect proposed above. In particular, prior work has suggested that teams do not only engage in action processes, such as information elaboration, but that also transition processes, that is the team's engagement in planning and evaluation, play an important role to understand team decisions (Marks et al., 2001).

An important transition process is team reflection (B. A. De Jong & Elfring, 2010) that refers to "the extent to which group members overtly reflect upon, and communicate about, the group's objectives, strategies (e.g., decision-making) and processes (e.g., communication), and adapt them to current or anticipated circumstances" (M. A. West et al., 1997, p. 296). Importantly, team reflection needs to be distinguished from related but different constructs. First, team adaptation refers to "a change in team performance, in response to a salient cue or cue stream, that leads to a functional outcome for the entire team" (Burke, Stagl, Salas, Pierce, &

Kendall, 2006, p. 1190). Although team reflection can represent an important (internal) signal for the team to change its approach to a task and may thus be an antecedent to team adaptation, team reflection does not (necessarily) entail any changes in the team's activities. Second, previous research has often used team reflexivity and team reflection interchangeably (see Wiedow & Konradt, 2011 for further discussions). Consistent with recent work on team cognition that distinguishes between reflexivity as "implicit cognitive processes that are automatic and spontaneous" and reflection as "controlled, deliberative, and conscious" processes (Healey, Vuori, & Hodgkinson, 2015, p. 400), we rely on the term "team reflection." However, we also include insights from research using the term "team reflexivity" in a way that is consistent with our definition of team reflection. Finally, consistent with extant research that has distinguished between information elaboration and team reflection (e.g., Nederveen Pieterse et al., 2011; van Ginkel & van Knippenberg, 2009), we highlight the difference between these two constructs. Specifically, team reflection "is focused on discussing 'metalevel' issues (i.e., taking a step back to evaluate group process, strategies, and objectives)," whereas "information elaboration is focused on processing task-relevant information" (Nederveen Pieterse et al., 2011, p. 156).

Previous research on team reflection has identified its positive consequences, such as higher levels of team innovation (Schippers, West, & Dawson, 2015), team learning (Schippers, Homan, & van Knippenberg, 2013), and team performance (B. A. De Jong & Elfring, 2010; Gurtner et al., 2007). Moreover, higher levels of reflection help team members learn from each other in interdependent tasks (De Dreu, 2007), benefit from dissenting opinions within a team in terms of team effectiveness and innovation (De Dreu, 2002), and develop appropriate task representations based on the team members' knowledge about the team task (van Ginkel & van Knippenberg, 2009). Given this crucial role of reflection for teams exploiting information, we suggest that reflection will further moderate the interplay between information elaboration and information reliability in team decision making. We will first describe the moderating effect in high-reflection teams and then turn to low-reflection teams.

First, we expect that high team reflection can further enhance the positive effect of elaborating unreliable information (compared to reliable information) on team decision quality. Above we have argued that processing and making sense of unreliable information is generally challenging (Remus et al., 1995; E. van Dijk & Zeelenberg, 2003) but that information elaboration can help teams to achieve high decision quality nevertheless because elaboration helps teams to scrutinize unreliable information and to integrate it into a coherent understanding of their

current situation. We expect that high reflection can lead to an even more coherent understanding gained through elaboration of unreliable information. Reflection helps teams learn from the information exchanged (De Dreu, 2007) and better capture the tasks and goals they have to accomplish as part of the discussion (Schippers et al., 2015). Therefore, high-reflection teams will be able to analyze elaborated unreliable information from a metalevel perspective (Nederveen Pieterse et al., 2011) by asking themselves the right questions about the task (Gurtner et al., 2007) and by focusing on the overall goal of reaching a high-quality solution (Schippers et al., 2015). That is, the coherent understanding gained through elaborating unreliable information will be further improved when the information is used in the light of the team's goals highlighted by team reflection.

In contrast, reliable information is relatively easy (compared with unreliable information) to use and integrate into a coherent framework (Low & Mohr, 2001; E. van Dijk & Zeelenberg, 2003) that is conducive to decision quality. Thus, if high-reflection teams are confronted with reliable information, they will be able to make sense out of a relatively small amount of exchanged information and need less thorough explanations for developing an effective coherent framework. Thus, team reflection likely compensates for lower levels of information elaboration when the available information is reliable, diminishing the positive relationship between information elaboration and decision quality. In fact, team reflection has been suggested to be “an antidote” to a lack of team-level information processing (Schippers et al., 2014, p. 731), such as information elaboration. Thus, information elaboration appears of less value for high-reflection teams when information is reliable in comparison to when information is unreliable.

Second, in contrast to high-reflection teams, teams showing low levels of reflection face difficulties to make sense out of elaborated information that is unreliable (see the challenges connected to unreliable information described above) and are therefore less likely to develop a coherent understanding of the information as would be required for achieving high decision quality. Due to their limited comprehension of the discussion's tasks and goals these teams may even be overwhelmed by the elaborated unreliable information. As low-reflection teams lack a metalevel perspective on their task, an understanding of how to approach the task, and the ability to monitor progress, they will find it difficult to foresee how the unreliable information elaborated in the discussion contributes to the overall decision context. Therefore, for low-reflection teams, it appears that elaborating unreliable information will have little benefit for enhancing decision quality.

In contrast, for low-reflection teams facing reliable information, there may be a positive effect of information elaboration on decision quality. Although low-reflection teams have difficulties understanding their goals because they are less able to take a metalevel perspective for analyzing the available information (Nederveen Pieterse et al., 2011), extensively elaborating reliable information, if available, will help them achieve better decisions nevertheless. The more low-reflection teams exchange, discuss, and integrate reliable information as part of the discussion, the more this information will enhance team members' understanding of the overall situation and the implication of the available information in its entirety despite the lack of a metalevel perspective on the team's tasks and goals. Thus, for low-reflection teams there will indeed be benefits of elaborating the reliable information at hand.

Based on these arguments, we expect a three-way interaction between information elaboration, information reliability, and team reflection in the prediction of team decision quality. Specifically, we postulate:

Hypothesis 2: Team reflection moderates the two-way interaction between information elaboration and information reliability. For high-reflection teams the positive relationship between information elaboration and team decision quality is stronger for unreliable than for reliable information, while for low-reflection teams the positive relationship between information elaboration and team decision quality is stronger for reliable than for unreliable information.

3.3 Methods

3.3.1 Sample and design

We recruited undergraduate students in business and economics lectures at a European university. Based on lists of volunteers who signed up for our study, we developed a pool of participants and randomly invited three people at a time to our lab. In total, 152 students participated in our study. Their average age was 24.31 years ($SD = 2.54$), and 83 (53%) participants were female. We experimentally manipulated information reliability (high vs. low) and randomly assigned the teams to the experimental conditions. In each condition, we had 26 teams—52 teams in total.

3.3.2 Team task

To test our hypotheses, we relied on a team decision-making task in which we distributed diverse information items across team members, consistent with previous work on information elaboration (Homan et al., 2007; Mell et al., 2014; van Knippenberg et al., 2010). Our participants were asked to take the role of entrepreneurial team members who were in the process of deciding to pursue one out of four potential business opportunities, which is a typical task for young entrepreneurial teams (Gruber et al., 2008). For the decision, the team needed to consider diverse information items distributed across members about the set of opportunities. Specifically, we constructed four opportunity alternatives drawing on Shane's (2000) descriptions of different business opportunities for the three-dimensional printing (3DP) technology. The team was asked to choose one of these four alternatives given they wanted to start a venture based on the 3DP technology. A pre-test on 22 students comparable to the full sample revealed no preference for one specific opportunity without additional information, $\chi^2(3) = 4.48, p = .21$, Kendall's $W = .07$. Consistent with previous research on hidden profiles (Schulz-Hardt et al., 2006; van Knippenberg et al., 2010), we constructed information sets for each team member that contained some common information given to all team members and some unique information given to one team member only. The common information suggested that a suboptimal solution was the best alternative; however, if the team considered all members' information, a different best solution became evident.

Each alternative was characterized using eight information items: the best alternative had six positive and two negative items, and the three suboptimal alternatives had three positive and five negative items. The items build on work on entrepreneurial decision making (e.g., Choi & Shepherd, 2004) and business models (e.g., Morris, Schindehutte, & Allen, 2005) and are presented in Appendix 7.2.1. Team members received personal information sets. The sets consisted of all negative items about the best alternative and all positive items about the suboptimal alternatives. These were the common information items available to the team, which—by design—did not need to be elaborated by the teams to identify the best solution. The unique information items (i.e., only given to one team member) were essential for finding the best solution and needed to be elaborated by the team to choose the optimal alternative. Each team member received two different positive items about the best alternative and one or two different negative items for the suboptimal alternatives. Based on these information sets, team members were unlikely to initially favor the optimal opportunity over the other alternatives, and there was likely sufficient heterogeneity in the team members' preferences before discussion. These

assumptions were supported by a pre-test in which we presented the four alternatives, including all information items, in random order to 45 participants comparable to our sample. We asked them to rank the alternatives from 1 to 4 in order of which alternative they would most likely exploit. The best available opportunity had a mean rank of 1.18 and was preferred by 39 students. A Friedman test showed significant differences between the alternatives, $\chi^2(3) = 63.05$, $p < .001$, Kendall's $W = .47$. Subsequent paired Wilcoxon tests showed that the best opportunity had a significantly better rank than all other alternatives, all z 's > 5.35 , $p < .001$. Thus, we can conclude that it is indeed seen as the best solution.

3.3.3 Procedure

When the participants arrived at the lab, we informed them about the study's procedure, they filled out a pre-experiment questionnaire, and we explained that they should take the role of members of a novice entrepreneurial team who want to start a business based on the 3DP technology. We instructed them that they had already identified four possible business opportunities, and the team now needed to choose one. For this task, they were randomly assigned the role of either a financial manager, marketing manager, or operations manager and received information sets tailored to their roles. First, the participants were asked to familiarize themselves with their information sets so they could have a well-informed discussion without frequently referring to the provided information. Second, the participants indicated on individual questionnaires the alternative they preferred prior to discussion. Consistent with the assumption of a hidden profile task that the individual information sets do not point toward the best solution, only 25 (16%) out of the 156 participants chose the best solution prior to team discussion. In the next step, we asked them to choose as a team the best opportunity out of the four alternatives. We did not create time pressure, but we told them that teams typically decide within half an hour. If necessary, the experimenter reminded the teams that 30 minutes had passed but did not specify any additional time limits (Schulz-Hardt et al., 2006). On average, the teams discussed for 22 minutes ($SD = 8.14$ min). We videotaped all team interactions for coding. Finally, the participants answered another short questionnaire providing additional information, and then we debriefed them and paid each 20 euros (~ 25 USD).

3.3.4 Variables

Team decision quality: High decision quality was represented by the selection of the best opportunity and was coded 1. All other choices represent low decision quality and were coded 0.

Information elaboration in the team task: Two raters rated information elaboration from the videos of the team interactions relying on a rating scheme developed by Resick et al. (2014), which is based on the categorization-elaboration model (van Knippenberg et al., 2004). We first presented the raters a definition of information elaboration and examples of behaviors reflecting information elaboration as described in the literature (Hoever et al., 2012; Homan et al., 2007; Resick et al., 2014). Then, the raters assessed each team's overall information elaboration on a 5-point scale with behavioral anchors for each value following Resick et al. (2014) with slight adjustments for the study's specific setting. Appendix 7.2.2 presents the rating scheme and provides examples of typical behaviors for each category. Two graduate students blind to our hypotheses were intensively trained on the basis of the rating scheme, clear construct definitions, and examples for very high and very low levels of information elaboration. Moreover, they were provided the full list of information items to have a better understanding of the teams' decision-making situation. They first practiced the rating on three team interactions, making extensive notes reflecting on the reasons for their rating choices and used this process for the identification of further questions regarding the rating scheme and/ or definitions. Relying on the ratings and the notes the coders discussed their ratings and remaining questions with the team of authors. After we ensured that they fully understood the construct and its manifestations in our team task, they rated all team interactions. The weighted kappa (J. Cohen, 1968) was 0.96, which indicates high agreement between the coders (Landis & Koch, 1977). For our analysis, we relied on the average scores of the two coders.

Information reliability: We manipulated information reliability versus unreliability between teams consistent with prior research defining information reliability as the certainty and unreliability as the uncertainty about the trustworthiness of information (Chancey & Bliss, 2012; DiFonzo & Bordia, 1997; Lee et al., 2016; Low & Mohr, 2001; Milliken, 1987). Specifically, we drew on a manipulation from previous work on the role of uncertainty in entrepreneurial team decision making (Breugst & Shepherd, 2017). This manipulation models low information reliability as perceived uncertainty if the information is sufficiently trustworthy and high information reliability as certainty about the high quality of the information.

In the *high information reliability* condition (coded as 1), 26 teams were instructed that their information was reliable, trustworthy, and based on expert sources. More specifically, we told them that a (fictitious) renowned consulting firm had conducted research for them, including extensive market studies, in-depth expert interviews, and detailed proofs of concept. Therefore, for all potential opportunities, reliable predictions were possible, and the information provided by the consulting firm could be trusted. We presented these information sets in reputedly looking folders with the consulting firm's logo. In contrast, teams in the *low information reliability* condition (coded as 0) were told that for all potential opportunities, no reliable predictions could be made. Participants were further told the information sets were based on rumors from non-expert acquaintances, and the trustworthiness of this information was limited as experience with the technology was limited, the feasibility of the opportunities was unclear, market potential was difficult to assess, and no expert opinions were available. To emphasize the doubtfulness of this information, it was presented on checkered paper and was handwritten.

Although the content and amount of information were identical across conditions, the information was presented to teams in different ways and with different descriptions of its source based on the teams' specific condition. Thus, based on our theorizing, we created two different team decision contexts in which all information items for all team members were either reliable or unreliable. Consequently, team members were unlikely to develop preferences for which single item in their set they want to share with the team based on the manipulation (Littlepage et al., 2012; Steinel et al., 2010).

As a manipulation check, we asked the participants in a post-experiment questionnaire about their perception of the information's reliability based on five items, such as "The information that our team possessed was trustworthy." The scale was reliable (Cronbach's alpha was .90; Hair, Black, Babin, Anderson, & Tatham, 2006). We compared the means for the high information reliability condition ($M = 5.68$, $SD = 0.80$) and low information reliability condition ($M = 3.87$, $SD = 1.15$), and a t -test indicated a successful manipulation, $t(154) = 11.49$, $p < .001$.

Team reflection: Consistent with calls to rely on observations to capture team reflection (Moreland & McMinn, 2010; Schippers et al., 2014), the raters coded team reflection from the videotaped team interactions. In developing the coding scheme, we followed the definition and work by M. A. West et al. (1997) and Schippers et al. (2007; 2014) and had the raters code all the team members' statements about their team's goals, strategies, and processes as well as the

team's reviewing activities (e.g., checking if the team was still on track, questioning the team's strategies, or adapting its approach to the team task). Appendix 7.2.3 provides an overview of the coding scheme and some sample statements. Again, the same two coders coded all team interactions after intensive training (following the same procedure as described above for information elaboration) and in a separate round of coding from information elaboration. Their agreement was 98%. We also computed the prevalence-adjusted bias-adjusted kappa (PABAK; Byrt, Bishop, & Carlin, 1993), which was sufficiently high, PABAK = 0.93. Based on these coded behaviors, for each team, we counted the number of reflective statements made during the interaction and used this score to capture team reflection. Again, we averaged the scores of the two coders for the analysis.

3.4 Results

Table 9 presents the descriptive statistics and correlations of all included variables. As the highest variance inflation factor (VIF) is 1.34 (for information elaboration), we assume that multicollinearity is not likely to be a concern in our data (Hair et al., 2006). As there is a modest correlation between information elaboration and team reflection ($r = .29, p = .04$), we first run confirmatory factor analyses in which we compare a model with one latent variable with a model specifying two separate latent variables for information elaboration and team reflection. We rely on the coding of Coder 1 and Coder 2 as indicators. The model with one latent variable on which all indicators load shows a poor model fit, $\chi^2(2) = 135.58, p < .001$; CFI = .64; SRMR = 0.28. In contrast, the model that includes two latent variables for information elaboration and team reflection shows a better model fit, $\chi^2(1) = 2.68, p = .10$; CFI = .99; SRMR = 0.01. The correlation between the two latent constructs is also significant, $r = .28, p = .04$. These findings indicate that while information elaboration and team reflection are related, they can still be considered separate constructs.

Table 9. Means, standard deviations, and correlations before mean centering

	Variable	<i>M</i>	<i>SD</i>	1	2	3
1	Information elaboration	2.03	0.90	–		
2	Information reliability ^a	0.50	0.50	.27	–	
3	Team reflection	11.88	6.78	.29*	–.07	–
4	Team decision quality ^b	0.33	0.47	.21	.04	.17

Note. *n* = 52

^a 0 = low information reliability and 1 = high information reliability.

^b 0 = team chooses suboptimal solution and 1 = team chooses optimal solution.

* *p* < .05.

Because the dependent variable—team decision quality—can be either high or low, we run a hierarchical logistic regression to test our hypotheses. All variables are mean centered before computing the interaction terms. Table 10 displays the results. We stepwise include the main effect for information elaboration (Model 1, Nagelkerke $R^2 = .06$), information reliability and its interaction with information elaboration (Model 2, Nagelkerke $R^2 = .07$), team reflection and all its two-way interactions (Model 3, Nagelkerke $R^2 = .10$), and—in the last step—the three-way interaction (Model 4, Nagelkerke $R^2 = .47$).

As our two hypotheses postulate interaction effects which are often difficult to detect because of their small effect sizes (Aguinis et al., 2010; McClelland & Judd, 1993), we report results based on a 10% level of significance. In our first hypothesis, we postulate that information reliability moderates the positive relationship between information elaboration and team decision quality such that the relationship is stronger for unreliable than for reliable information. Model 2 in Table 10 shows that the interaction between information elaboration and information reliability is not significant ($b = 0.54, p = .46$). Thus, Hypothesis 1 is not supported.

Table 10. Prediction of team decision quality

	Model 1			Model 2			Model 3			Model 4		
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>
Constant	-0.75	(0.30)	0.01	-0.82	(0.32)	0.01	-0.85	(0.35)	0.02	-1.19	(0.51)	0.02
Information elaboration	0.49	(0.34)	0.15	0.47	(0.37)	0.20	0.30	(0.41)	0.46	0.52	(0.64)	0.42
Information reliability ^a				-0.10	(0.64)	0.88	0.03	(0.68)	0.96	0.89	(1.01)	0.78
Information elaboration × information reliability				0.54	(0.74)	0.46	0.81	(0.81)	0.32	1.68	(1.28)	0.19
Team reflection							0.05	(0.05)	0.31	0.20	(0.11)	0.07
Information elaboration × team reflection							-0.01	(0.06)	0.86	-0.27	(0.18)	0.14
Information reliability × team reflection							-0.02	(0.10)	0.84	0.26	(0.22)	0.24
Information elaboration × information reliability × team reflection										-0.95	(0.37)	0.01
Model test	-2LL = 63.53			-2LL = 62.97			-2LL = 61.67			-2LL = 44.58		
	$\chi^2(1) = 2.20, p = .14$ Nagelkerke $R^2 = 0.06$			$\chi^2(3) = 2.76, p = .43$ Nagelkerke $R^2 = 0.07$			$\chi^2(6) = 4.06, p = .67$ Nagelkerke $R^2 = 0.10$			$\chi^2(7) = 21.15, p = .004$ Nagelkerke $R^2 = 0.47$		
Incremental χ^2 -test				$\chi^2(2) = 0.57, p = .75$			$\chi^2(3) = 1.30, p = .73$			$\chi^2(1) = 17.09, p < .001$		

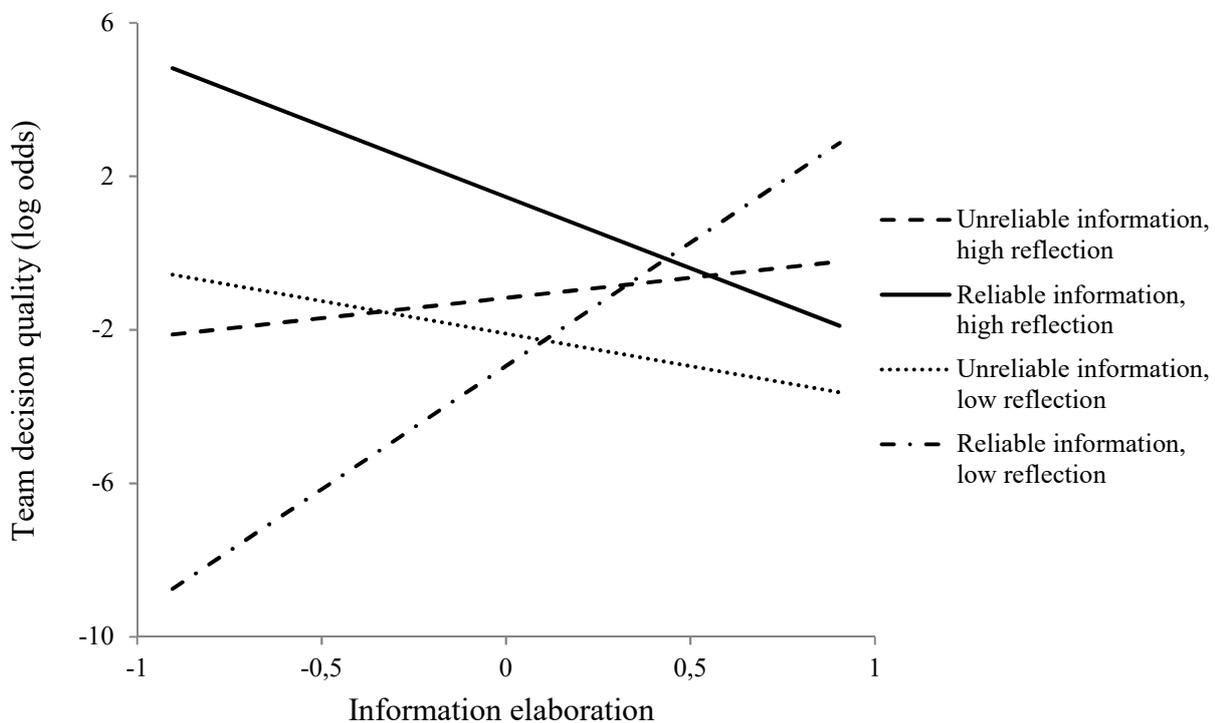
Note. $n = 52$ ^a 0 = low information reliability and 1 = high information reliability.

Hypothesis 2 postulates that team reflection moderates the two-way interaction between information elaboration and information reliability: For high-reflection teams the positive relationship between information elaboration and team decision quality is expected to be stronger for unreliable than for reliable information, while for low-reflection teams the positive relationship between information elaboration and team decision quality is expected to be stronger for reliable than for unreliable information. In Table 10, Model 4, the coefficient of the three-way interaction is negative and significant ($b = -0.95, p = .01$). To better understand the nature of the three-way interaction, we provide a plot in Figure 3. We follow Jaccard's (2001) recommendations to plot the predicted log odds of team decision quality on the y-axis, presenting the results in linear functions to facilitate their interpretation relying on the PROCESS tool for SPSS (Hayes, 2012). We also plotted our results relying on Stata's "margins" and "marginsplot" command to take into account the nonlinear nature of our dependent variable. Results were fully consistent with Figure 3. For high-reflection teams (one standard deviation above the mean), the line for teams confronted with reliable information (solid line) indicates a negative relationship ($b = -3.71, p = .10$), whereas the line representing unreliable information is not significant (dashed line; $b = 1.05, p = .32$). In contrast, for low-reflection teams (one standard deviation below the mean), the relationship is significant and positive ($b = 6.43, p = .03$) for reliable information (dashed-dotted line), but not significant for unreliable information (dotted line; $b = -1.70, p = .16$). Additionally, slope-difference tests (Dawson & Richter, 2006) show that the slopes differ significantly for high-reflection teams confronted with unreliable versus reliable information ($t = 1.93, p = .06$) as well as for low-reflection teams confronted with unreliable compared to reliable information ($t = -2.60, p = .01$).

In sum, our results provide only partial support for Hypothesis 2. Specifically, in line with our expectations, low-reflection teams show a positive relationship between information elaboration and team decision quality under conditions of high information reliability, but no significant relationship under conditions of low information reliability; this difference of slopes is significant. In contrast to our expectations, high-reflection teams show a negative relationship between information elaboration and team decision quality under conditions of high information reliability and no significant relationship under conditions of low information reliability; again the difference is significant. In other words, independent of their level of reflection, teams confronted with unreliable information do not show any relationship between information elaboration and team decision quality.

In contrast, teams confronted with reliable information show a positive relationship between information elaboration and decision quality team for low-reflection teams, but this relationship is negative for high-reflection teams. We will discuss these interesting findings in detail below.

Figure 3. Moderating effect of information reliability on the relationship between information elaboration and team decision quality (log odds) for high and low levels of team reflection



3.4.1 Robustness check

To test if our results are stable after the inclusion of potentially relevant control variables, we also run a robustness check adding several control variables to our model. First, as the time spent on discussing decision alternatives influences a team’s decision quality (Reimer, Reimer, & Czienskowski, 2010), we include the duration of the team interaction (in minutes) directly coded from the video tapes. Second, the participants’ entrepreneurial experience might influence their approach to an opportunity set (Gruber et al., 2008) and thus impact how they elaborate information, deal with unreliable information, and reflect on the team task. We capture

the participants' entrepreneurial experience in the pre-experiment questionnaire (with the item "Have you ever started a

business?," e.g., Peterman & Kennedy, 2003). Third, the disposition to trust others likely impacts the swift trust arising in the team (Robert, Denis, & Hung, 2009) and hence influences the nature of the team interaction (Meyerson, Weick, & Kramer, 1996). In the pre-experiment questionnaire, we capture the participants' dispositional trust with an 8-item scale (Ostendorf & Angleitner, 2004) which has a Cronbach's alpha of .78. Finally, the team's task motivation might impact information processing in the team (De Dreu, Nijstad, & van Knippenberg, 2008) and influence team decision quality (Colquitt & Chertkoff, 2002). Thus, in the post-experiment questionnaire, we capture the team members' task motivation relying on a 4-item scale based on Colquitt and Chertkoff (2002) which has a Cronbach's alpha of .68. Following the compositional model logic (Kozlowski & Klein, 2000), we calculate the average team values for entrepreneurial experience, dispositional trust, and task motivation. None of the control variables are significant in our analyses. Consistent with our initial results, the interaction between information elaboration and information reliability (Hypothesis 1) is not significant ($b = 0.56$, $p = .46$) and the three-way interaction between information elaboration, information reliability, and team reflection is negative and significant ($b = -1.00$, $p = .01$).

3.5 Discussion

Extant work on information elaboration has shown its positive effects on team decision quality in tasks including diverse and distributed information (Homan et al., 2007; Mell et al., 2014; Nederveen Pieterse et al., 2011; Rico et al., 2012; van Knippenberg et al., 2010). However, research focusing on the boundary conditions of these effects has just started to emerge (Gardner et al., 2012; Resick et al., 2014). Our study reveals a complex interplay between information elaboration, the nature of the information available to the team, and team reflection in explaining team decision quality. Specifically, for teams high in reflection, we find no significant relationship between information elaboration and team decision quality when teams are confronted with unreliable information. However, the relationship is negative when reliable information is available. For teams low in reflection confronted with unreliable information, there is also no significant relationship between information elaboration and team decision quality, but there is a significant and positive relationship for teams with reliable information.

These findings have important implications for research on team information processing as well as practical implications for teams entrusted with important decisions.

3.5.1 Theoretical and practical implications

Complementing prior research on information elaboration (Homan et al., 2007; Mell et al., 2014; Nederveen Pieterse et al., 2011; Rico et al., 2012), our study provides a nuanced perspective on the relationship between information elaboration and team decision quality. Previous work has highlighted the particular importance of information elaboration for teams acting under task uncertainty (Gardner et al., 2012) and environmental turbulence (Resick et al., 2014) because of multiple challenging conditions for team members, such as the limited effectiveness of planning, the experience of stress, and the reduced establishment of routines. One particular challenge of these and similar environmental conditions, such as novelty (Lee et al., 2016) and dynamism (Stieglitz et al., 2016), is the confrontation with doubtful, quickly outdated information of uncertain quality. In contrast to previous work, the design of our study allowed us to focus on the uncertain trustworthiness of information as the only and specific challenging aspect of participants' task environment. Across conditions teams in our study received identical instructions for their decision-making task, the task procedure was identical, and the same information content was presented. The only difference between conditions was how the information was introduced to the teams. Previous studies (Gardner et al., 2012; Resick et al., 2014) have operationalized challenging environments in a way that task demands change substantially over the course of the team work and that they create high levels of stress, uncertainty, and confusion with respect to the team's actions and outcomes. Thus, in these studies, challenging environments are likely to result in different *information content* compared to less challenging environments, whereas in our study only the *presentation of the information* differed for teams in different conditions. Our findings suggest that this different presentation of high vs. low reliability information as a single challenging environmental characteristic does not explain variance in the relationship between information elaboration and team decision quality when included as a single moderator. Instead, our study reveals a more complex picture and a three-way interaction indicating that the relationship between information elaboration, information reliability, and team decision quality is additionally contingent on team reflection—an accompanying transition process that prior research on team information processing

has tended to neglect (Sohrab et al., 2015). Analyzing the nature of this interaction in detail provides interesting insights, although they are only partially consistent with our expectations.

First, in contrast to teams facing reliable information, we do not find any significant relationship between information elaboration and decision quality for teams confronted with unreliable information across the range of team reflection. Therefore, a contribution of our study is that it identifies information reliability as an important boundary condition for the relationship between information elaboration and team decision quality although information reliability does not affect this relationship as a single moderator. While reflection triggers learning from information exchange (De Dreu, 2007), supports teams' understanding of their tasks and goals (Schippers et al., 2015), and, thus, should help teams to deal with conditions of uncertainty (Chen et al., 2018), such as unreliable information, higher levels of reflection do not help teams benefit from elaborating unreliable information. Perhaps, following an information processing perspective, this non-finding is another indicator for the difficulty to deal with unreliable information and to sufficiently integrate it in decision making (e.g., Low & Mohr, 2001; Remus et al., 1995; E. van Dijk & Zeelenberg, 2003). Unreliable information might not only trigger the perceived need to scrutinize the information as we theorized, but teams might also be confused by the challenging character of the information, consistent with the notion that uncertain information diminishes decision makers' focus on their task (Alison, Power, van den Heuvel, & Waring, 2015). As a consequence, elaborating unreliable information may not influence decision quality independent of the level of reflection. Another explanation could be that participants perceived no need to focus their attention on information based on rumors and, thus, do not benefit from elaborated unreliable information. This explanation is consistent with findings that teams attend less to information that they were told to be unimportant (Littlepage et al., 2012; Steinel et al., 2010). However, research on rumors has demonstrated that decision makers do rely on rumors despite being aware of their limited accuracy (Dalal, Diab, & Tindale, 2015; DiFonzo & Bordia, 1997) and that although persons experience uncertainty around rumors, they tend to communicate this information to others (Dubois et al., 2011). These findings suggest that our manipulation of information reliability should still be of some relevance for team decision making, even if team members might believe that the unreliable information is also inaccurate. However, we see potential for future research to manipulate both, information reliability as well as accuracy to better understand how teams deal with information of high and low quality in decision-making tasks. Specifically, combining these manipulations would help

to understand the conditions under which teams discount or neglect information and if there are specific conditions under which teams, in fact, scrutinize their information.

Second, for teams working with reliable information, the relationship between information elaboration and team decision quality was significant for teams both high and low in reflection. However, the relationship changes its direction depending on the team's level of reflection. For low-reflection teams, the relationship is positive as expected, but interestingly the relationship becomes negative for high-reflection teams. Thus, only for teams building on reliable information and engaging in little reflection, we find the positive effect of information elaboration on team decision quality that has been postulated and empirically found by the majority of studies on information elaboration (e.g., Homan et al., 2007; Mell et al., 2014; Nederveen Pieterse et al., 2011; Rico et al., 2012). Our findings suggest that future research on information elaboration should more explicitly address under which conditions its often postulated benefits apply. For example, Sohrab et al. (2015) highlights that research on team information processing does not sufficiently study the nature of the available information and accompanying team processes. In fact, our study supports the notion that information elaboration is not always beneficial (e.g., Resick et al., 2014) and offers a first indication that it can even be detrimental to team decision quality under certain conditions.

Third, focusing on high-reflection teams facing reliable information, our study provides novel insights how team reflection affects decision outcomes. Previous work has found that team reflection affects decision outcomes positively and in both direct and indirect ways (e.g., De Dreu, 2007; Gurtner et al., 2007; van Ginkel & van Knippenberg, 2009). Our finding that high levels of reflection compensate for low levels of information elaboration empirically validates theoretical arguments by Schippers et al. (2014), who suggest that reflection can prevent failures in team information processing. Yet, surprisingly, we find that for high-reflection teams the elaboration of reliable information has a negative effect on decision quality. As both, information elaboration and reflection, deplete cognitive resources and involve high levels of effort (e.g., Healey et al., 2015; Hoever et al., 2012), it might be the case that these teams feel overloaded and therefore have less attentional resources available to focus on the ideas developed during the discussion, thus reducing team performance (Ferreira, Antunes, & Herskovic, 2011). Therefore, our study contributes to research on reflection by extending Schippers et al.'s (2014) theoretical model and showing a potential downside of high reflection. An important theoretical implication is that reflection can be a key factor influencing the outcomes of team action processes such as information elaboration both positively or negatively, at least if the

team decision-making context provides an appropriate basis (e.g., reliable information). Future theorizing and empirical work could build on our findings and explore more nuanced roles of team reflection as a moderator in the relationship between team action processes and decision outcomes under different environmental conditions.

Beyond these implications for research, this study also provides interesting insights for practice, particularly for teams entrusted with critical decisions based on reliable information. Our results suggest that team reflection can play very different roles in the decision making of these teams. On the one hand, team reflection can compensate for a lack of information elaboration if teams can build on reliable information. Given that rather simple interventions can increase team reflection (Gurtner et al., 2007; Nederveen Pieterse et al., 2011), it might be helpful for teams to increase their level of reflection under these conditions before approaching important decisions. On the other hand, if teams intensely engage in the elaboration of reliable information, high levels of reflection might indeed be detrimental to team performance. Thus, as information elaboration and team reflection both entail an investment of time and effort for teams (e.g., Healey et al., 2015; Hoever et al., 2012), when the information at hand is reliable it might make sense to set a stronger focus on either one of the two team processes to make best use of sparse resources.

3.5.2 Limitations and avenues for future research

Although our study allows us to identify some important contingencies in the relationship between information elaboration and decision quality, we also want to acknowledge its limitations and offer some ideas how future research could complement and extend our findings. First, we acknowledge that our sample size of 52 teams is rather small. While this sample size is consistent with previous research on team processes ($n = 50$ in Beersma, Homan, Van Kleef, & De Dreu, 2013; $n = 49$ in Gurtner et al., 2007; $n = 49$ in Nederveen Pieterse et al., 2011), a larger sample size might have helped us to detect weaker effects, in particular with respect to the simple slope analysis. Still, as only three-way interactions with large effect sizes are likely to be detected in small samples (Dawson & Richter, 2006), we consider the significant findings in our sample to be indeed meaningful. However, future research is needed to corroborate our results based on larger samples.

Moreover, it might be interesting to study teams differing in temporal scope—that is, teams that already have prior experience working together and/or expect to work together in the future (Alge, Wiethoff, & Klein, 2003). While we explicitly created a situation in which the team interaction should not be influenced by past experiences or pre-existing team structures, our design did not allow us to study the development of team processes over time. Yet, in many professional settings individuals will need time to adapt to their team (Beus, Jarrett, Taylor, & Wiese, 2014). Future research could build on our findings and repeatedly confront teams with a similar task. As teams showing high levels of reflection were found to be better able to learn from poor initial performance (Schippers et al., 2013), over time reflection might help teams to achieve higher levels of decision quality by using elaborated information more efficiently.

Consistent with previous research on team processes and decision making (Hoever et al., 2012; Nederveen Pieterse et al., 2011; Schippers et al., 2013), we relied on a student sample. While this approach allowed us to specify and manipulate the available information and observe the entire team discussion and, thus, represents an important early step to understand the contingencies of information elaboration, future research is needed to compare our findings to teams in real-life settings. For example, student teams confronted with a hypothetical task might be less motivated than teams working on their actual task which might impact their likelihood to benefit from an exchange of information (De Dreu et al., 2008; Steinel et al., 2010). Still, a robustness check controlling for team members' task motivation (see above) suggests that our findings are not substantially biased by differing levels of task motivation.

Finally, it would be interesting to explore the individual-level antecedents of team processes, such as cognitive abilities and self-reliance beliefs for information elaboration (Resick et al., 2014) and team members' individual reflection activities for team reflection (Gurtner et al., 2007)—that is, conducting a cross-level study. However, given our focus on the team level and constructs that we could observe during team interactions, these antecedents are outside the scope of the current study. Future research could try to embed our theorizing in a multilevel model capturing the interplay of individual information processing and behavior with team-level information processing and team processes. Such a study might help explain team performance even more holistically (for example, in line with the model by Griffith & Sawyer, 2010).

3.5.3 Conclusion

Our study contributes to a growing body of research that sheds light on the effect of information elaboration on team performance. Our findings reveal a complex interplay between information elaboration, information reliability, and team reflection indicating that information elaboration is not always conducive to team decision quality. We encourage future research to build on our work and analyze the interactions between teams' decision-making contexts and team processes to better understand decision outcomes.

4 Essay III: From Dating to Happily Ever After. . . or Divorce: A Future Research Agenda on Entrepreneurial Teams Taking a Lifecycle Perspective

Entrepreneurial teams substantially contribute to the foundation and success of new firms, particularly in high-tech and knowledge-intensive industries. While entrepreneurship research has started to acknowledge the importance of entrepreneurial teams breaking away from the myth of the entrepreneur as the lonely hero entrepreneur, we still do not sufficiently understand entrepreneurial teams' emergence, their functioning, and their breakup. Therefore, this essay follows the lifecycle of entrepreneurial teams to review the extant literature with respect to each stage and to provide avenues for future research within each lifecycle stage as well as across stages highlighting the dynamic changes that entrepreneurial teams often experience.

First, I focus on *entrepreneurial team formation* and review studies on the team members' backgrounds and experiences, their prior ties, contracting, and role allocation. The second stage refers to *entrepreneurial team collaboration* and encompasses team processes, such as team decision making, learning, and conflict as well as emergent states, such as transactive memory systems, collective identity, and team entrepreneurial passion. Finally, an important stage in the lifecycle of entrepreneurial teams is the *dissolution of the (current) entrepreneurial team*. Specifically, team members leave, new members enter, founders are replaced, or the entire team dissolves and abandons the venture.

For all these stages, I discuss how entrepreneurial teams shape the development of young ventures and their performance and point to important gaps in our understanding of entrepreneurial team functioning. Moreover, I highlight that while these stages follow the entrepreneurial process, they are not strictly linear and they are also interconnected. For example, the dissolution of the current team after the initial venture is sold or fails will shape how team members move on and whether they start a new business together. Thus, the essay opens up interesting future avenues for increasing our understanding of entrepreneurial teams by calling for a dynamic process perspective on entrepreneurial teams and by offering specific opportunities for future research.

4.1 Introduction

“What you need to do in a cofounder relationship, is not necessarily decide who is good at what but like in any other relationship, figure out the other person and figure out your relationship with them.” – Kevin Systrom, cofounder of Instagram (Stanford, 2011)

In 2009¹⁰, Kevin Systrom created a check-in app called burbn. When his first investor required him to take on a cofounder, he chose Mike Krieger whom he barely knew at the time and who was more experienced in technology development. Although they received 0.5 million USD investment, they could not grow the user numbers to be successful. Building on the most popular feature of burbn, they decided to continue their collaboration and focus on an app for sharing photos. This new idea became Instagram which has experienced overwhelming success. In 2012, Instagram was acquired by Facebook for 1 billion USD. While staying on board for several years, both Instagram founders jointly left Facebook and, thus, Instagram in 2018 (Frier, 2018). Reflecting on his cofounding experience Kevin Systrom stated “Looking back, I can’t imagine starting a company without a cofounder” (Stanford, 2011).

This story stands out not just because of Instagram’s tremendous success but also because it triggers interesting questions. How do founding team members experience this journey of developing a strong friendship, jointly facing successes and failures, and going together through an acquisition and an exit? To what extent is a strong team spirit connected to their success? While entrepreneurial team research is typically not able to follow teams over their entire lifespan from team members’ initial meeting to venture’s dissolution or acquisition, a growing body of research provides insights into elements of the entrepreneurial team journey.

To bring together these fragmented insights and address the questions outline above as well as other relevant questions, this essay adopts a lifecycle perspective to reviews the existing literature on entrepreneurial teams. I take into account the entire entrepreneurial team journey from the initial formations stage and entrepreneurial team collaboration until entrepreneurial team dissolution. Based on a comprehensive review of the literature on entrepreneurial teams from 2008 to 2018, I summarize existing knowledge and develop promising avenues for future research both within each stage of the lifecycle as well as across stages highlighting the dynamic journey that entrepreneurial teams often experience.

¹⁰ Based on the podcast „How I Built This“ with both Instagram founders (Raz, 2016)

4.2 Methodology

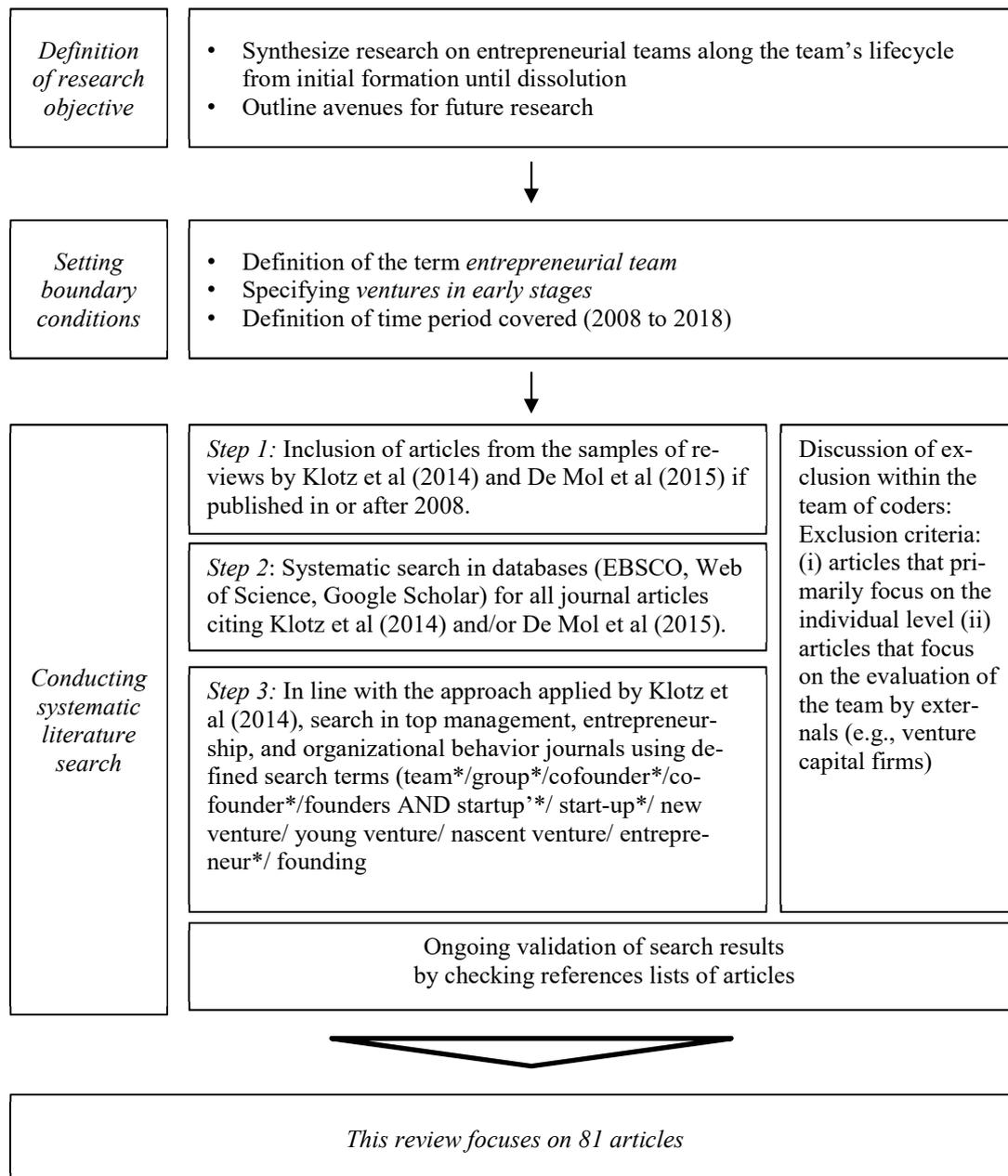
In line with my objective to understand the literature on entrepreneurial teams by taking a lifecycle perspective, I followed a formal review process including compiling a comprehensive collection of relevant work, synthesizing the previous literature, and outlining future research (Short, 2009). Consistent with other review articles, I structure my review process in three steps—namely, data collection, data analysis, and data synthesis (e.g., De Mol et al., 2015).

Data collection: Before starting the data collection, I clearly defined the term ‘entrepreneurial team’, providing important conceptual boundaries to my search. Combining three widely used definitions of entrepreneurial teams, I understand entrepreneurial teams as “two or more individuals who have a significant financial interest” (Cooney, 2005, p. 229), who pursue “a common goal” (Harper, 2008, p. 614), and who are “chiefly responsible for the strategic decision making and ongoing operations of a new venture” (Klotz et al., 2014, p. 227). While a new venture can be defined “as a firm that is in its early stages of development and growth” (Klotz et al., 2014, p. 227), these *early stages* are typically defined rather broadly including ventures up to ten (Forbes, 2005) or eleven years old (Ensley et al., 2002).

Next, as an additional boundary condition, I defined the relevant time period of articles covered. I decided to start data collection in the year 2008 mainly because I wanted to focus on rather recent insights and because in this specific year, Harper (2008) published his highly cited paper on entrepreneurial teams. Linking the starting date to a major article is common for literature reviews (e.g., Connelly, Certo, Ireland, & Reutzel, 2011). To collect relevant articles for the time period from 2008 to 2018, I followed a systematic approach (see Figure 4). First, I included all articles published in or after 2008 that were listed in the two major reviews by Klotz et al. (2014) and/or De Mol et al. (2015). While Klotz et al. (2014) focused on empirical papers only, I decided to also include conceptual articles in line with De Mol et al. (2015). In this step, I included 30 articles. Second, I searched in databases (Web of Science, EBSCO, Google Scholar) for journal articles citing Klotz et al. (2014) and/or De Mol et al. (2015). I excluded all articles that did not focus on entrepreneurial teams and those that were not published in academic journals (e.g., theses, working papers, books, book chapters), resulting in 21 articles to be included in this review. Finally, to increase accuracy and include more recent insights, I performed a systematic database search for the period of January 2013 to November 2018. I followed Klotz et al. (2014) and focused my search on top journals in management (*Academy of Management Journal*, *Academy of Management Review*, *Strategic Management Journal*, *Journal of Management*, *Journal of Management Studies*, *Organization Science*, *Management*

Science, Administrative Science), entrepreneurship (*Journal of Business Venturing, Entrepreneurship Theory & Practice, Strategic Entrepreneurship Journal*), and organizational behavior (*Journal of Applied Psychology, Organizational Behavior and Human Decision Processes, Journal of Organizational Behavior, Leadership Quarterly*). This search, conducted using the EBSCO database, yielded 24 articles focusing on entrepreneurial teams. In addition, I continually checked the references lists of articles in my sample to further increase accuracy of my search results. Based on this systematic search I included three more articles in this review. In total (see Figure 4) I included 78 articles in my review plus the two major reviews by Klotz et al. (2014) and De Mol et al. (2015) and the conceptual paper by Harper (2008). This number significantly exceeds the number of papers included in previous reviews (De Mol et al., 2015; Klotz et al., 2014).

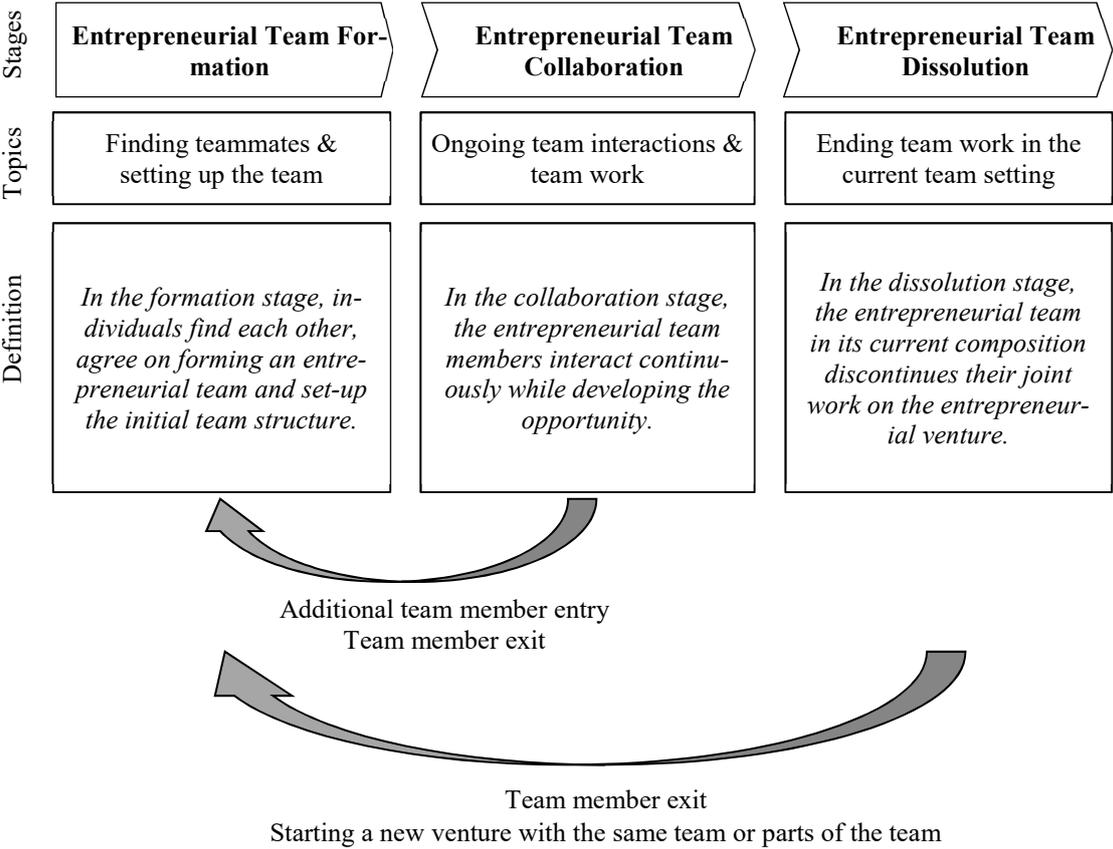
Figure 4. Approach literature review



Data analysis: To analyze the 81 articles included in this review, I followed a systematic approach including code definition and comprehensive coding. Since my main research objective is to develop a lifecycle perspective on entrepreneurial teams, identifying which of the articles belongs to which lifecycle stage, was the primary focus of my coding process. To code accurately, I first discussed with senior entrepreneurship researchers which topics play an important role for entrepreneurial teams. Next, I sorted these topics along a timeline from team members’ ‘initial contact’ to ‘working together’ to ‘leading a maturing venture or exit’. Based on this topic mapping, I looked for exemplar articles along the timeline and started clustering the topics

into three lifecycle stages—namely formation, collaboration, and dissolution—and defining each stage in more detail. At this point, it became obvious that there are some dynamic topics, i.e., topics that trigger movement between lifecycle stages. Figure 5 provides an overview on the lifecycle stages and their definitions.

Figure 5. The entrepreneurial team’s lifecycle



Next, together with two research assistants I coded all articles according to the lifecycle stage and further relevant codes (name(s) of author(s), journal, year, method, keywords, key constructs used, key findings, sample). Importantly, when coding the articles into the lifecycle stages not only a purely independent-dependent-variable logic was used, but rather a more comprehensive assessment of the article. While some work focuses exclusively on one stage of the lifecycle, those that cover (constructs from) more than one stage typically link antecedents from an earlier stage to outcomes of a later stage. However, my comprehensive assessment allowed me to code each article in line with its primary focus. To ensure accuracy, I discussed codes with experts (senior entrepreneurship researchers) until agreement was reached. I provide an overview of all articles and their lifecycle stage coding in Appendix 7.3.1.

4.3 A lifecycle perspective on entrepreneurial teams

Based on my comprehensive coding, I present my findings along the lifecycle of entrepreneurial teams: the stages of entrepreneurial team formation, collaboration, and dissolution. When reporting the results of my literature review, I mainly rely on the 81 articles in the sample of this review but include older papers on teams or relevant work on the individual or firm level when they are helpful for understanding either the research stream or my reasoning for future research ideas.

4.3.1 Entrepreneurial team formation

In this initial lifecycle stage of entrepreneurial teams, the individuals find each other, agree on forming an entrepreneurial team, and set-up the initial team structure. My analysis revealed that most studies (50 out of 81) focus on this early stage and, more specifically, on the team's composition compared to the team's set-up process.

4.3.1.1 Team composition

Research on the entrepreneurial team's composition has mainly taken an upper echelon perspective (Klotz et al., 2014) which is a prominent theoretical perspective on linking top management teams' characteristics to firm-level outcomes of established organizations (Bromiley & Rau, 2016; Hambrick & Mason, 1984). Previous research¹¹ on the characteristics of entrepreneurial team members has focused on various types of prior experiences such as functional experience (e.g., Amason, Shrader, & Tompson, 2006), educational background (e.g., Foo, Sin, & Yiong, 2006; Hmieleski & Ensley, 2007), prior shared experience (Zheng, Devaughn, & Zellmer-Bruhn, 2016), and entrepreneurial experience (Brannon, Wiklund, & Haynie, 2013). Beyond broad experience types such as human capital-related measures, more specific capabilities, such as marketing capabilities and design capabilities (Zhao, Song, & Storm, 2013) as well as teamwork capabilities and relational capabilities (Brinckmann & Hoegl, 2011) have been the focus of entrepreneurial team research and have been linked to venture outcomes. Moreover, research has analyzed which competence sets entrepreneurial team members prefer

¹¹ See Klotz et al (2014) for a comprehensive review including articles published before 2008.

in their potential cofounders depending on their own experiences (Kollmann, Häsel, & Breugst, 2009) as well as product characteristics (Häsel, Kollmann, & Breugst, 2010). In line with literature on top management teams, previous research on entrepreneurial teams has focused on aggregated characteristics (Beckman & Burton, 2008; Zhao et al., 2013), heterogeneity in characteristics (Souitaris & Maestro, 2010), and shared (i.e., jointly made) experiences (Zheng, 2012). Prior findings on team members characteristics and their effects on performance outcomes are mixed (Klotz et al., 2014). For example, regarding the consequences of team heterogeneity past studies have offered equivocal findings with some studies arguing that diversity in terms of skills and perspectives enhances performance, and others suggesting that diversity triggers conflicts and thus can be detrimental to performance (Jin et al., 2017). To consolidate prior studies' conflicting results on the effects of team composition on venture performance, Jin et al. (2017) conducted a meta-analysis of 52 studies in which they included aggregated entrepreneurial team characteristics as well as heterogeneity of entrepreneurial team characteristics operationalized not as specific constructs, but as “desirable abilities and dispositions of individuals“ (Jin et al., 2017, p. 756). The meta-analysis found that both aggregated entrepreneurial team characteristics as well as heterogeneity of entrepreneurial team characteristics have a positive effect on new venture performance and that this effect was stronger for the aggregated entrepreneurial team characteristics. Recent studies taking an upper echelon perspective investigate additional types of heterogeneity, but also shed light into mechanisms through which heterogeneity influences outcomes (Dai, Byun, & Ding, 2018; Preller, Patzelt, & Breugst, 2018). For example, Dai et al. (2018, p. 3) found that gender diversity “helps unlock the benefits of two other innovation-inducing diversity types—the functional diversity in new venture teams and the presence of women employees” and thereby has a positive impact on innovation performance.

While those studies investigating the entrepreneurial team's composition have revealed interesting insights, they have often relied on *observable* characteristics (Klotz et al., 2014) despite theorizing on more sophisticated and underlying characteristics such as “risk taking tolerance, personality, time horizon, commitment level, and value system” (Wasserman, 2012, p. 96). Given the prevalent use of secondary data, this focus is understandable, but it has created a “black box,” failing to theoretically connect team characteristics with team and venture outcomes (Klotz et al., 2014, p. 248).

4.3.1.2 Team set-up processes

An important but often neglected part of team composition, is the set-up of the entrepreneurial team. To date, we only have limited insights into the processes underlying how team members select each other and how the emerging team agrees on a team structure and contracts, such as equity distribution.

Selection process: One major reason for this lack of (recent) research seems the necessary, but difficult collection of rich and processual data allowing to follow emerging teams since to-be-ventures are neither registered yet nor publicly announced and are thus hard to identify (Forbes, Borchert, Zellmer-Bruhn, & Sapienza, 2006). An early qualitative study on three new ventures (Forbes et al., 2006) identified three ways individuals identify potential new team members: (i) direct contact, (ii) indirect networking, and (iii) an impersonal search process. Once the potential partners are aware of each other, a selection process in terms of the political (i.e., who can decide) and cognitive (i.e., information collection, exchange and usage) decision-making model can unfold. While Forbes et al. (2006) focused on the addition of one team member to an existing entrepreneurial team, we know very little about the team members' identification and selection process when there is no existing team already. For the identification of potential teammates in the very early phase familiarity seems to be one of the most relevant aspects (Ruef, Aldrich, & Carter, 2003). More specifically, Brannon et al. (2013) found in their sample of entrepreneurial teams from the Panel Study of Entrepreneurial Dynamics that almost 60% of the teams consisted of family members. It is unlikely however, that such high numbers can also be found in samples of high-technology sectors or university startups.

The actual selection process of teammates may follow a rational model which “emphasizes selecting members based on pragmatic instrumental criteria” or a social-psychological model which “emphasizes the interpersonal fit between team members” (Aldrich & Kim, 2007, p. 157). While theoretical work has suggested that the social-psychological model is more prevalent in the large number of entrepreneurial teams emerging outside highly institutionalized areas (Aldrich & Kim, 2007), cofounding with highly familiar contacts, such as family or friends, might be rather unstable (Wasserman, 2003). With regard to the timing of selection, Discua Cruz et al. (2013, p. 39) found no clear pattern indicating whether entrepreneurial teams are formed around an existing opportunity or jointly searched for an opportunity. Thus, they concluded that most of the time, “opportunity identification and team formation were interwoven”.

Team structure: In the team formation stage, team members decide about task position allocation within the team. However, insights into these decisions and their consequences are rare. Initial studies focused on the consequences of role allocation. For example, Sine et al. (2006) found that both higher role formalization and functional specialization in the entrepreneurial team are associated with higher levels of venture performance. Beckman and Burton (2008) explicitly differentiated prior functional experience from a new venture's functional structure and showed how the venture's functional structure shapes firm development. They found that a limited variety of functional positions at firm foundation decreases the likelihood of more complete firm structures later and that more complete functional structures are in turn related to staging an initial public offering more quickly. In a recent study, Jung, Vissa, and Pich (2017, p. 290) investigated how hierarchically ranked task positions are allocated within the team and found that "both specific expertise and diffuse status cues are used." While specific expertise cues predict task position (e.g., team members with expertise in finance are more likely to be assigned to the CFO position), diffuse status cues (e.g., being male, being white, having occupational prestige or having received academic honors) indicate higher-ranked positions (e.g., CEO). Further, a fit between team members' position and their status cues is related to higher levels of venture performance. Instead of linking positions to status or expertise, Wasserman (2012) observed that founders who have the idea are more likely to become the venture CEOs (47% idea-having-CEOs vs. 12% non-idea-having CEOs).

Contracting: Existing literature suggests that there are many advantages for entrepreneurial teams to agree on a contract setting the boundaries of their collaboration: a contract can help team members define the venture's ownership structure, protect the intellectual property involved, and prepare for potential changes in team composition (Hellmann & Thiele, 2015). Theoretical work has suggested that contracting can mitigate the negative effect of the novelty faced by entrepreneurial teams and thus help build relational capital in the team (Blatt, 2009). These contracts could refer to a multitude of aspects of teamwork and members' behavior, such as typical team charters, including team roles, expectations, and processes as well as rewards and sanctions specified by the team members for the team (Mathieu & Rapp, 2009). A study by Foo et al. (2006) hypothesized on the role of the team leader in helping his or her entrepreneurial team develop a collective goal but did not include goals identified by the team or the goal setting process. Most work on entrepreneurial teams has focused on rewards, in terms of equity distribution—a focus consistent with the definition of entrepreneurial team members as owners of the venture (Ucbasaran et al., 2003). The equity distribution among entrepreneurial team members is their "first deal" (Hellmann & Wasserman, 2017, p. 2647) and involves important

consequences, such as “financial rewards and the level of power and control within the firm” (Breugst et al., 2015, p. 66) as well as status implications (Wasserman, 2012). Previous research on equity distribution has focused mainly on the *initial* equity distribution during venture foundation and its consequences for venture-level outcomes (Breugst et al., 2015; Hellmann & Wasserman, 2017). However, the consequences of equity distribution are not sufficiently clear. For example, a quantitative study of 1,367 teams from North American technology-based startups found that teams with an equal split are less likely to raise external financing than teams with an unequal split, but this effect seems to be driven by a preference for equality in those teams that is connected to lower performance (Hellmann & Wasserman, 2017). In contrast, an inductive study found that not the equality or inequality of the split, but the *perceived justice* of the equity distribution shaped positive team and venture outcomes (Breugst et al., 2015). So far, empirical research has investigated *initial* equity distribution as a stable construct (Breugst et al., 2015; Hellmann & Wasserman, 2017) with a focus on its outcomes rather than the timing and process of the distribution. While a formal model by Hellmann and Thiele (2015) highlighted the advantages of later splits or contingent splits (i.e., vesting schemes) to deal with the uncertainty around founders’ skills, a recent empirical study reported that decisions on the distribution are made quickly (e.g., 42% of teams report a day or less; Hellmann & Wasserman, 2017). Importantly, recommendations from practice even involve more complex considerations, such as time- or milestone based vesting terms, and dynamic equity distributions over time as well as bringing on board investors resulting in highly sophisticated ownership structures (Wasserman, 2012). It is hardly understood how these considerations are formed and shape the future of the entrepreneurial team and its venture.

4.3.1.3 Future research on entrepreneurial team formation

Entrepreneurial team research has provided important insights into the team formation stage but has mainly focused on questions of team composition. Most of these studies have taken an upper echelon perspective (Hambrick & Mason, 1984), focusing on entrepreneurial team members’ characteristics and how these characteristics shape the venture (Jin et al., 2017; Klotz et al., 2014). Despite this research stream’s maturity and comprehensiveness (as indicated by a recent meta-analysis; Jin et al., 2017), there are still some areas for future research. Most importantly, considering *more sophisticated and underlying characteristics* of team members would complement extant insights. Typically, research in the upper echelon tradition has

focused on team member characteristics that can be observed or extracted from a resume. However, more underlying characteristics like “his or her risk taking tolerance, personality, time horizon, commitment level, and value system” (Wasserman, 2012, p. 96) are likely to play an important role for team functioning and thus venture development. As one of the few studies on more sophisticated types of team member’s characteristics, Souitaris and Maestro (2010) showed that polychronicity (i.e., team members’ mutual preference for completing tasks in a certain temporal manner, for example, simultaneously or one at a time) as a value-based type of team member characteristic influences team processes and venture outcomes. Further, it might be interesting to study how different types of heterogeneity and homogeneity interact or shape each other to impact team processes and venture outcomes together (Preller et al., 2018).

While analyzing the set-up of the entrepreneurial teams is likely important to understanding subsequent venture development, research on team set-up is surprisingly sparse. However, taking stock of extant research gives rise to a broad range of interesting research questions. Linking research on team member characteristics and team member *selection* opens several questions: to what extent are team members aware of their teammates’ characteristics in the selection process, how do they evaluate these characteristics, and how do they eventually make compromises (if they do)? For example, if a customer-oriented founder meets a potential co-founder who is a software coding expert but seems to have different values than the founder, how important will skills be compared to shared values in the decision to take a co-founder on board? How do these considerations affect teamwork in this venture? Building on insights from the first studies on contracting, research could study informal contracts specifying team members’ roles, expectations, and processes. As studies on team charters have demonstrated that the quality of these charters matter for team performance (Courtright, McCormick, Mistry, & Wang, 2017; Mathieu & Rapp, 2009), it would be interesting to study the impact of these informal agreements on venture development. Specifically, entrepreneurial teams might not have sufficient time to develop team charters as they are likely to feel overwhelmed by the operational task load when developing their opportunity (Ries, 2011; Wasserman, 2012). Moreover, bringing together research on team composition, team member selection, and team set-up is likely to open up inspiring research questions. For example, are well-developed team charters more valuable for teams with certain types of team members (for the substitutive effect of team conscientiousness, see Courtright et al., 2017)? What role does experience play in shaping the team members’ expectations for their teammates? What should informal contracts look like in a team based on high familiarity compared to a team based on low familiarity? Given the differences between family and non-family teams and even differences between teams consisting of couples or

biologically linked team members (Brannon et al., 2013), it would be highly insightful to better understand how a team's relationship history before founding and the current expectations connected to these relationships shape current team functioning.

As indicated by the types of research questions proposed, not only quantitative studies, but also qualitative (variance and process-oriented) studies are required. Moreover, longitudinal approaches would be highly insightful because they allow researchers to capture the dynamics of team composition and set-up. For example, while role titles (e.g., CEO) may be highly stable over time, tasks seem likely to vary strongly depending on the venture's development stage and are likely to change with the venture's growth. Thus, more fully understanding how tasks change over time and how they are re-allocated is an interesting avenue for future research. Finally, most of the studies on entrepreneurial team formation do not sufficiently take into account the context surrounding teams. For example, culture, in particular the individualism vs. collectivism dimension (Triandis, Bontempo, Villareal, Asai, & Lucca, 1988), might have an impact on a team's equity distribution and connected justice perceptions and might make the negotiation process even more challenging in culturally diverse teams. However, teams' social context will also shape team formation. Others, such as educators, mentors, and investors might serve as "matchmakers" and bring potential cofounders together to form a team. These approaches make it highly relevant to understand whether these 'strategically casted' teams differ in their teamwork from self-selected teams. Moreover, investors might impact teams' equity distribution and mentors might help teams in the development of their team charter. Thus, including the entrepreneurial team's interactions with the outside world opens up an interesting avenue for future research potentially providing more nuanced insights that are highly relevant for theory and practice.

4.3.2 Entrepreneurial team collaboration

In the collaboration stage, entrepreneurial team members interact continuously while developing their opportunity. Research in this stage can be separated into task-related and interpersonal processes on the one hand and cognitive and affective emergent states on the other hand. Interestingly, compared to research on team composition, there are fewer studies investigating this highly relevant stage of the entrepreneurial team lifecycle (23 out of 81 studies).

4.3.2.1 Entrepreneurial team processes

Team processes are defined “as members’ interdependent acts that convert inputs to outputs through cognitive, verbal, and behavioral activities directed toward organizing taskwork to achieve collective goals” (Marks et al., 2001, p. 357). Extant research on entrepreneurial teams has mainly focused on task-related processes in terms of decision making and learning as well as on interpersonal processes in terms of conflicts within the team and between the team and others.

Task-related processes: The entrepreneurial journey gives rise to numerous decisions (Shepherd et al., 2015) that often need to be made by the entrepreneurial team (G. P. West, 2007). While some early work on entrepreneurial teams shed light on the process of entrepreneurial team decision making (e.g., Bourgeois & Eisenhardt, 1988; Eisenhardt, 1989b; Eisenhardt & Schoonhoven, 1990), the studies in the cover period of this review have instead focused on the link between team composition and decision making. For example, Souitaris and Maestro (2010) suggested that higher levels of polychronicity among team members increase venture performance, partially mediated by decision speed and comprehensiveness. In another study, linking team composition in terms of ethnical heterogeneity with team processes, Chaganti, Watts, Chaganti, and Zimmerman-Treichel (2008) found that teams including ethnic immigrants are more likely to make more aggressive decisions than teams with non-ethnic-non-immigrant team members. Specifically, ethnically diverse teams tend to make decisions towards the exploitation of new opportunities (e.g., agreeing on higher research and development as well as marketing expenses).

Another task-related process in the focus of entrepreneurial team research has been entrepreneurial learning. Chandler and Lyon (2009) distinguished between different types of learning and linked them to venture performance. They found that congenital learning (i.e., based on prior experience) as well as vicarious learning (based on observing others) and knowledge-acquisition activities are positively related to venture performance. They also found that these effects are stronger when environmental dynamism is high, consistent with the increasing cognitive demands arising from a quickly changing environment. Focusing on knowledge transfer, Knockaert et al. (2011) found for academic-spin-offs that tacit knowledge transfer works better for teams in which the original scientists play a major role but commercial persons are also represented. Importantly, between both groups (scientists and commercial persons) cognitive distance should be rather small (Knockaert et al., 2011). Other studies have focused on entrepreneurial learning as an outcome. For example, Sardana and Scott-Kemmis (2010) found that

entrepreneurs learn most when they take on a role for which they do not have sufficient prior experiences, but the entrepreneurial team is experienced and promotes learning. Rauter, Weiss, and Hoegl (2018) showed that teams' negative affective reaction to setbacks has a complex relationship with their self-assessed team learning: If teams engaged in high levels of reflexivity, they learn after a setback, whereas learning is reduced if they engaged in low levels of reflexivity.

Taking a broader perspective on entrepreneurial teams as well as entrepreneurial action, Harper (2008) in his classic paper theorized on entrepreneurial teams as actors that discover, evaluate, and exploit opportunities. However, despite his call for empirical research his propositions have not been taken up and tested systematically along the process from opportunity identification to exploitation, but research has mainly focused on initial opportunity identification (Gruber, MacMillan, & Thompson, 2012; Gruber et al., 2013) Thus, many task-related processes in the entrepreneurial team remain to be explored.

Interpersonal processes: Research on interpersonal processes (i.e., processes that teams use to manage their relationships; Marks et al., 2001) in entrepreneurial teams has mainly focused on conflicts within the team and their consequences. In line with the general literature on team conflict (De Wit, Greer, & Jehn, 2012) research on conflicts in entrepreneurial teams has found that (i) cognitive conflict positively influences venture performance outcomes¹² (A. De Jong, Song, & Song, 2013; Ensley & Pearce, 2001; Vanaelst et al., 2006), (ii) affective conflict negatively affects venture performance (A. De Jong et al., 2013; Ensley et al., 2002), and (iii) affective conflict promotes team member exit (Vanaelst et al., 2006). Studying entrepreneurial affect as a more proximal outcome of team conflict, Breugst and Shepherd (2017) found that in a field setting, both types of conflict increases the entrepreneurial team members' negative affect, whereas in a lab setting, affective conflict increases and cognitive conflict reduces team members' negative affect. Consistent with attribution theory (Weiner, 1985), uncertainty buffers these affective reactions, while satisfaction with the team intensifies them. Other work has focused on entrepreneurial team conflict as an outcome of venture-related events (Forbes, Korsgaard, & Sapienza, 2010), showing that devaluations of ventures in financing rounds results in an increase of affective conflict compared to up-round financings.

¹² While there has been some debate in general team research on conflict regarding whether cognitive conflict is indeed connected to positive outcomes, the meta-analysis by De Wit et al. (2012) showed that despite a non-significant overall relationship between cognitive conflict and performance, the cognitive conflict-performance relationship is more positive in samples of top management teams compared to lower level teams.

4.3.2.2 *Entrepreneurial team emergent states*

Emergent states refer to “constructs that characterize properties of the team that are typically dynamic in nature and vary as a function of team context, inputs, processes, and outcomes” (Marks et al., 2001, p. 357). In the entrepreneurial team literature, cognitive and affective emergent states have been studied.

Entrepreneurial team cognition: Extant research on cognition in the entrepreneurial context has mainly taken an individual level perspective, with only a few studies investigating the link between team cognition and performance (Grégoire, Corbett, & McMullen, 2011). Based on a comprehensive literature review of entrepreneurial team cognition, De Mol et al. (2015, p. 243) define entrepreneurial team cognition 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.”

Importantly, entrepreneurial team cognition does not emerge as the sum of individual cognitions held by team members, but “arises from complex interactions among (cognitions) of individual members of an entrepreneurial team” and “varies as a function of team context, inputs, processes, and outcomes” (De Mol et al., 2015, p. 240).

Entrepreneurial team cognition has been conceptualized using many different concepts such as shared strategic cognition (Ensley & Pearce, 2001), strategic consensus (Vissa & Chacar, 2009), creative cognition (Shalley & Perry-Smith, 2008), and transactive memory systems (Zheng, 2012; Zheng & Mai, 2013). While a focus on shared/ collective knowledge is inherent in all of the concepts, they still differ significantly in their operationalization limiting the comparability of studies’ results (De Mol et al., 2015).

Integrating the findings of studies on entrepreneurial team cognition is challenging not only because of the different concepts used, but also because these few studies have tended to focus on specific contexts. For example, three studies on transactive memory systems (Dai et al., 2016; Zheng, 2012; Zheng & Mai, 2013) relied on Chinese samples and highlighted that information seeking might work differently “in emerging economies where market supporting institutions are deficient” (Zheng & Mai, 2013, p. 197). Similarly, a study on strategic consensus (Vissa & Chacar, 2009) drew on data from Indian software companies, thus relying on data

from not only an emerging economy but also a single industry. However, altogether there seem to be tentatively positive effects of team cognition either directly on outcomes, such as entrepreneurial orientation (Dai, Roundy, Chok, Ding, & Byun, 2016) and new venture growth (Zheng, 2012), as well as indirectly by helping teams benefit from their networks (Vissa & Chacar, 2009).

Another interesting challenge arising in research on entrepreneurial team cognition is its dynamic nature (Lewis & Herndon, 2011; Shalley & Perry-Smith, 2008). While previous research has mainly taken a static perspective when studying entrepreneurial team cognition, the study by Perry-Smith and Coff (2011) highlighted the importance of studying entrepreneurial team cognition over time. The authors found that for different stages in the entrepreneurial creativity process (i.e., idea generation and selection), different moods are conducive to the process (Perry-Smith & Coff, 2011).

While an individual's identity is partly based on his or her social cognition (Ellemers, Spears, & Doosje, 2002; Hogg & Terry, 2000), we hardly have any insights into entrepreneurial team identity despite the growing number of research on entrepreneurial identity at the individual level (e.g., Fauchart & Gruber, 2011; Grimes, 2018; Mathias & Williams, 2017). This lack of research is surprising given that "individual cognitions about identity ("I think") facilitate the emergence of shared cognitions ("we think")" (Ashforth, Rogers, & Corley, 2011, p. 1146). As an exception, the inductive study by Powell and Baker (2017) focused on nine emerging ventures and analyzed how entrepreneurial team members' identities flow into a prototype of a collective identity that in-groups enforce over time to form a shared collective identity that shapes team and venture development. Importantly, the entrepreneurial team members and ventures in the sample all had a community-oriented purpose. Thus, future research could complement these insights and explore how team identity forms and shapes the venture's vision or mission in other contexts.

Affective states: Typically, research on entrepreneurial teams has focused more on team cognition in team collaboration and less on teams' affective states. One of the most studied affective emergent states is team cohesion (Mathieu, Maynard, Rapp, & Gilson, 2008). Team cohesion was included in early studies on entrepreneurial teams, which showed its positive consequences for ventures (Ensley & Hmieleski, 2005; Ensley et al., 2002). Moreover, cohesion was found to help teams benefit from individual members' resources (Vissa & Chacar, 2009). Finally, research on investors' evaluations of entrepreneurial teams has revealed that experienced investors appreciate higher levels of cohesion (Franke, Gruber, Harhoff, & Henkel, 2008).

Further entrepreneurial team research related to affect has typically built on work at the individual level and brought it to the team level. For example, while entrepreneurial passion has been extensively studied at the individual level (Cardon, Gregoire, Stevens, & Patel, 2013; Cardon & Kirk, 2015; Cardon et al., 2009) and in relation to employees (Breugst, Domurath, Patzelt, & Klaukien, 2012; Cardon, 2008), surprisingly little is known about entrepreneurial passion in the context of entrepreneurial teams. In a theoretical paper, Cardon, Post, et al. (2017, p. 286) conceptualized team entrepreneurial passion as “the level of shared intense positive feelings for a collective team identity that is high in identity centrality” for the entrepreneurial team. However, to date, empirical research building on this conceptualization and operationalization is yet to emerge. Interestingly, Cardon, Post, et al. (2017) also discussed entrepreneurial team passion diversity (i.e., a dispersion construct focusing on within-group variation of passion) which might be another highly relevant area for future research.

One of the few studies investigating moods within entrepreneurial teams suggested that distinct collective moods (measured as average individual moods) are needed for different stages of creativity—namely, idea generation and selection (Perry-Smith & Coff, 2011). However, given the study’s hypothetical setting, in which student teams worked on idea generation and selection in clearly separated phases, additional research is needed focusing on actual entrepreneurial teams working on real-life tasks for longer periods (i.e., weeks or months). However, given the highly iterative process of opportunity development (e.g., based on customer feedback or after a pivot; Grimes, 2018), studies analyzing the interplay of collective moods and entrepreneurial tasks are bound to be methodologically challenging.

4.3.2.3 Future research on entrepreneurial team collaboration

As entrepreneurial team research has only started to explore the “black box” (Klotz et al., 2014, p. 248) of team processes and emergent states, future research is needed to provide more systematic insights into entrepreneurial team collaboration. Specifically, research on team processes could shed light on intrateam communication or coordination given that entrepreneurial teams are not embedded in large organizations with well-developed structures for information exchange (Chuang, Jackson, & Jiang, 2016). Moreover, while a plethora of work has focused on the role of business planning (Brinckmann, Grichnik, & Kapsa, 2010), there are no insights into the role of teamwork planning—that is, the “the development of alternative courses of

action for mission accomplishment” (Marks et al., 2001, p. 365)—despite its important role as a team process contributing to high levels of team performance (Fisher, 2014).

Prior research on entrepreneurial team cognition has suffered from a lack of clarity in the individual constructs and their inter-relations (De Mol et al., 2015). One avenue to develop more specific research questions with respect to more specific constructs is to explicitly connect team cognition to entrepreneurial tasks. For example, instead of understanding the overall effects of a team’s transactive memory system for venture performance, studies could analyze its impact on opportunity recognition. As opportunity recognition has been described as individuals being able to “connect the dots” (Baron, 2004, p. 104) of their prior experiences, a well-established transactive memory system might help team members bring together their individual experiences to collectively discover an opportunity. During opportunity evaluation, which has been defined as “individuals’ judgments and beliefs regarding the degree to which events, situations and circumstances construed as an entrepreneurial opportunity represent a personally desirable and feasible action path” (Wood & McKelvie, 2015, p. 256) the team members’ strategic consensus might be necessary to move from team members’ judgments and beliefs to a collective judgment and belief.

As entrepreneurial team research on affective states is still in its infancy (i.e., providing first conceptualizations and empirical insights) its future direction is hardly predictable. However, the first studies have suggested that experiences within teams shape members’ negative affect (Breugst & Shepherd, 2017). Theoretical work has provided even more complex insights into the ways in which entrepreneurial affect in the form of entrepreneurial passion can develop at the team level and shape individual, team, and venture outcomes (Cardon, Post, et al., 2017). Following work on affect in teams, entrepreneurial team research could consider affect more broadly and study the development of teams’ affective tone—that is, the “consistent or homogeneous affective reactions within a group” (George, 1990, p. 108). Consistent with the influence of affect at the individual level, teams’ affective tone might influence their work on entrepreneurial tasks, such as opportunity evaluation (Foo, 2011) and exploitation (Van Gelderen, Kautonen, & Fink, 2015). However, affect at the team level can even take more complex forms if team members experience emotions of different valence (e.g., fear vs. hope) or of different activation level (fear vs. resignation) in the face of challenges. Future research could help us understand how entrepreneurial teams jointly master the ‘emotional rollercoaster’ of the entrepreneurial journey and how they find ways to manage (or at least tolerate) teammates’ intense affective experiences.

4.3.3 Entrepreneurial team dissolution

Compared to research on initial team composition and team collaboration, previous research on later stages of entrepreneurial teams' development is rather rare (Guenther et al., 2016). In this review, three out of the 81 articles included deal with entrepreneurial team dissolution. However, looking at entrepreneurial teams from a lifecycle perspective, I argue that over time the entrepreneurial team in its current composition discontinues joint work on the entrepreneurial venture. Reasons for this discontinuation are (i) a changing team composition due to the *exit* of one or more entrepreneurial team member(s), (ii) venture failure or a harvest sale prompting the end to the entrepreneurial team's work on *this* venture, and (iii) the evolution of the entrepreneurial venture into an established organization, triggering a co-evolution process of the entrepreneurial team into a top management team and the potential entry of non-entrepreneurial executives into the venture's leadership.

4.3.3.1 *Exit of individual entrepreneurial team members*

Research on entrepreneurial team member exit is rather rare despite the fact that many entrepreneurial teams experience one or more team member exit(s) over time, threatening the venture's survival (Guenther et al., 2016). Taking an upper echelons perspective (Hambrick, 2007), previous research has identified numerous antecedents of team member exit, such as demographics (e.g., industry tenure, entrepreneurial experience, age, functional diversity, and religious affiliation; Chandler, Honig, & Wiklund, 2005; Ucbasaran et al., 2003), team characteristics (e.g., initial team size; Chandler et al., 2005), and team processes (e.g., dysfunctional team conflict; Vanaelst et al., 2006). Previous research on the consequences of team member exit has mainly focused on venture-level outcomes and has presented ambiguous findings. While some studies have reported positive outcomes of team member exit (e.g., increased favorable venture exit likelihood after dismissal of two or more entrepreneurial team members by venture capitalists; Busenitz, Fiet, & Moesel, 2004), others have pointed out negative consequences (e.g., explaining effects on performance taking a social capital perspective; Bamford, Bruton, & Hinson, 2006).

To better understand the consequences of team member exit, more research is needed on team experiences and outcomes during and after the exit process (Wennberg & DeTienne, 2014) extending prior insights on how the individual entrepreneur disengages from his or her venture (Rouse, 2016). Shedding light on the mechanisms seems particularly important, as prior studies

have relied on opposing theoretical arguments: Studies that have found positive consequences have argued that typically underperforming team members exit, allowing the remaining team members to adapt to changed conditions (Boeker & Karichalil, 2002; Busenitz et al., 2004; Chandler et al., 2005). In contrast, studies finding a negative relationship between team member exit and venture performance have highlighted the loss of resources connected to the exit and the need to build up new structures (Bamford et al., 2006). Guenther et al. (2016) provided a more nuanced perspective and showed that the negative performance implications of team member exit is contingent on venture age and diminishes for older ventures. Further relevant contextual factors, such as environmental dynamism (Chandler et al, 2005), seem to entail more negative consequences of team member exit compared to less dynamic environments. A recent study indicated that for some remaining founders, exit processes can cause extreme stress and psychological disengagement and can increase uncertainty about the venture's future (Dibbern, Preller, Breugst, & Patzelt, 2017). Further, how the legal and operational terms of the exit process are handled might be important for understanding the prior equivocal findings. Most importantly, the exit of an entrepreneurial team member implies a change in the venture's ownership structure. Piva and Rossi-Lamastra (2017) showed that team characteristics in terms of team size, heterogeneity (i.e., age, gender, and ethnicity), and cohesion play some role for the decision of the exiting team member to sell his or her shares internally (i.e., to his or her teammates) or externally (i.e., to external buyers). However, this study did not include important legal contracting between team members. For example, contract clauses on team member exit are a standard part of the initial legal agreements between entrepreneurial team members, often including regulations on vesting (i.e., that founders receive shares only over time), non-compete clauses, and pre-buying rights in case of a founder exit (Hellmann & Thiele, 2015). As most studies have focused on exit as an isolated event and have not considered specific conditions and individual- and team-level consequences, our understanding of the outcomes of entrepreneurial team member exit is still underdeveloped.

4.3.3.2 Venture exit as trigger of the entrepreneurial team's dissolution

Entrepreneurial teams might also stop working on their entrepreneurial venture when the venture in its initial form no longer exists because of failure or a harvest sale. Traditionally, exit in the entrepreneurship literature has been focused on failure in contrast to survival (Wennberg & DeTienne, 2014). Only more recently have scholars started investigating different exit strategy types in terms of a financial harvest exit strategy, a stewardship strategy, or voluntary cessation

strategies (DeTienne et al., 2015). Importantly, other than in the case of venture failure, these exit types with a positive connotation are typically intended by entrepreneurs (Hsu, Wiklund, Anderson, & Coffey, 2016) and are often planned early in the entrepreneurial journey (DeTienne et al., 2015), stressing the importance of taking a longitudinal perspective. Previous research has focused on studying exit from an individual (Rouse, 2016) and venture level perspective, whereas studies focusing on the team level are rare (Wennberg & DeTienne, 2014). Of the few studies taking the team level into account, most have focused on team characteristics, such as team size (DeTienne et al., 2015), explaining the likelihood of an exit event or the exit type rather than investigating consequences for the team and its members. However, taking an entrepreneurial team's lifecycle perspective, it would be interesting to understand how teams compared to individuals experience the failure process and what happens to the team after the exit. While prior research on entrepreneurial failure has taken into account a social perspective and has included the reactions of the venture's external stakeholders (Mantere, Aula, Schildt, & Vaara, 2013; Shepherd & Haynie, 2011; Sutton & Callahan, 1987), studies have not sufficiently focused on the reaction among entrepreneurial team members as well as among team members and outsiders in the face of failure.

Also, in the case of other exit types, such as selling the venture or leaving the venture after a successful initial public offering (DeTienne, 2010), "the role of the teams is especially important since these are represented more often in high-tech ventures, where someone eventually will seek to harvest their efforts through exit" (Wennberg & DeTienne, 2014, p. 10). However, to date, we know little about the role of the team in intending or planning the exit or about the subsequent team behavior after selling the venture or undergoing an initial public offering. For example, while some team members might stay as managers with the venture for some time (like Kevin Systrom and Mike Krieger from the initial example stayed after Facebook bought Instagram), others might move on to start or join another venture or to a different career (Jenkins & McKelvie, 2017).

4.3.3.3 Evolution from entrepreneurial team to top management team

Besides changes in the team composition through team member exit or venture exit, venture developments have implications for the way entrepreneurial teams work together (Ferguson, Cohen, Burton, & Beckman, 2016). While this transformation might be less relevant for everyday businesses (Aldrich & Ruef, 2018), it seems highly relevant for all kinds of technology and

growth-oriented ventures, which have frequently been studied in the entrepreneurial team literature. For these types of ventures, once they reach certain milestones such as receiving funding by venture capitalists or staging an initial public offering, the formerly new venture develops into a more established organization implying better access to resources in terms of human, financial, and social capital (Boeker & Karichalil, 2002; Hellmann & Puri, 2002; Wasserman, 2003).

For the entrepreneurial team managing the maturing (and potentially growing and more complex) venture means a transition from managing a small new venture with typically only a few members, high levels of uncertainty (McMullen & Shepherd, 2006), and a focus on attaining resources (Zott & Huy, 2007) toward leading a larger-scale organization with numerous and more diverse members, more elaborate processes and structures, and a broader range of stakeholders (Wasserman, 2012). These changes within the venture are likely to be reflected in the roles and tasks of the entrepreneurial team members (Wasserman, 2012). For example, instead of developing the technology by coding software him- or herself, the founder responsible for the technology now typically leads a developer team spending most of his or her days managing team members. Thus, while still acting in a founding role, the founder's job profile has changed from software development activities to a leadership position. In addition, while at the venture's beginning, the entrepreneurial team usually holds all equity and thus control over the venture (Breugst et al., 2015), this structure may not apply for maturing and growing ventures (Wasserman, 2003). Especially, for growth-focused ventures, over time investors such as venture capitalists take over a significant part of the equity resulting in increased control over the venture (Wasserman, 2012). This change in ownership and control might trigger changes in decision making since the investors' stake in the venture acts as a boundary condition for the entrepreneurial team. At the same time, especially the involvement of venture capital firms as investors can trigger a general professionalization of the venture and its team (Hellmann & Puri, 2002), which also affects how the entrepreneurial team members collaborate.

Interestingly, studies investigating entrepreneurial teams in more mature ventures (e.g., staged initial public offering) have often used hybrid terms like "entrepreneurial top management team" (Ferguson et al., 2016) and "new venture top management team" (Hmieleski & Ensley, 2007) or "top management team from founding to IPO" (Beckman & Burton, 2008), indicating an evolutionary perspective on entrepreneurial teams. However, these studies have generally not reported the composition of teams in terms of original founders or hired managers but have predominantly used hierarchy levels to identify top management teams. For example, Ferguson

et al. (2016) sampled all top managers at the hierarchical level of vice president and above without indicating their involvement in founding the venture. To build up a coherent stock of knowledge on entrepreneurial teams, future research could be more explicit in explaining the level of venture maturity and which types of team members are included in the theorizing and empirics.

4.3.3.4 Future research on entrepreneurial team dissolution

Entrepreneurial team research has so far hardly studied the last stage of the entrepreneurial team's lifecycle leaving many interesting and relevant topics for future research. In particular, work on individual entrepreneurial team member's exits has mainly focused on venture performance neglecting individual- and team-level outcomes which have the potential to provide more nuanced insights that could reconcile the conflicting results of extant research (Guenther et al., 2016). Moreover, as exit is not just one short event, but most likely involves a decision-making process of the entrepreneurial team and/or the exiting member, taking a processual perspective seems to be fruitful. Following first insights that negative team interactions can trigger team member exit (Breugst et al., 2015; Vanaelst et al., 2006), future research should focus on understanding team members' cognitive and affective states throughout the exit process and their implications for a potential recovery building on a recent qualitative study (Dibbern et al., 2017). Additionally, the role of investors requires more in-depth research since they might trigger the exit (Breugst et al., 2015) but also provide (legal) support during managing the exit based on their experiences (Hellmann & Puri, 2002). For cases when the entire team leaves the venture after the venture is sold, it would be highly interesting to explore the collective decision-making process shaping collective exit intentions (compared to individual exit intentions; DeTienne & Cardon, 2012).

Besides selling the venture, the entrepreneurial team might discontinue working on the venture because it fails. While research on the important topic of entrepreneurial failure is highly prolific at the individual level (Jenkins & McKelvie, 2017; Shepherd & Haynie, 2011; Singh, Corner, & Pavlovich, 2015), we hardly have any insights into entrepreneurial teams' collective experience of failure and the way they cope with it. Social psychology has pointed to the phenomenon of "cutting off reflected failure" after team malperformance—that is, team members behave in ways "as to make it appear unlikely (or less likely) that one is associated with a group that has failed" (Snyder, Lassegard, & Ford, 1986, p. 383). Thus, team members might distance

themselves from the entrepreneurial team and blame each other. However, team members who identify strongly with their team have also been found to make even more intense contributions to the team after failure (De Cremer & Van Dijk, 2002). Given that entrepreneurial team members typically show high levels of identification with their team (Blatt, 2009), it could also be the case that team members support each other and consider tackling new projects together.

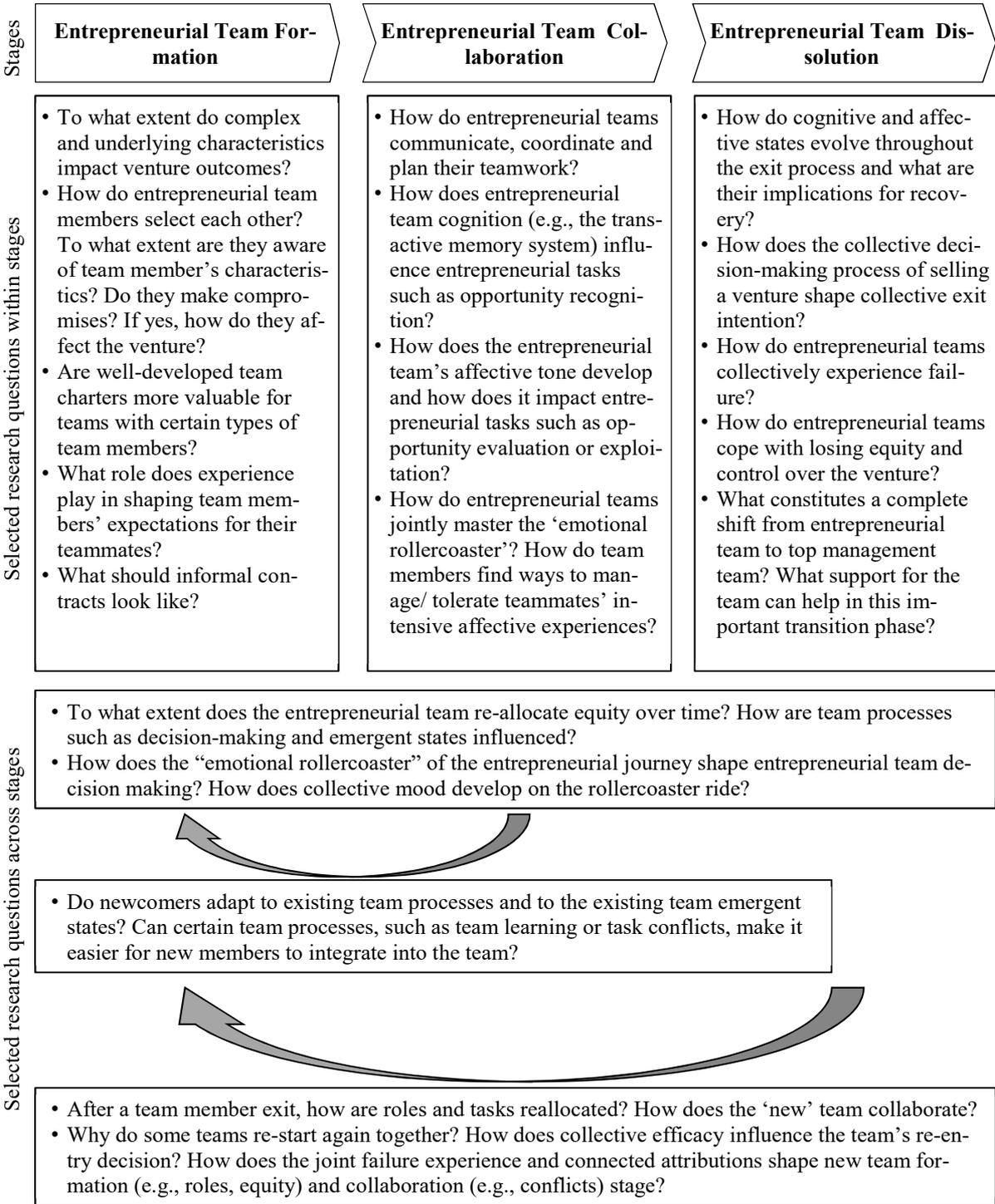
Although my goal is to provide a coherent framework of entrepreneurial team research, the extant literature has focused on teams in very different stages in terms of the *venture's* maturity. In particular, earlier research on teams in the entrepreneurial context has focused on ventures shortly before or after staging an initial public offering (e.g., Kroll et al., 2007). Consequently, these studies have defined these teams as *top management teams in new ventures* (or similar terms) rather than founding teams. Studying teams' evolution from an entrepreneurial (founding) team to a top management team might be a very interesting avenue for research (for a first step in this direction, see Ferguson et al., 2016): How do entrepreneurs cope with a situation in which they repeatedly lose equity and control over their venture? How does collaboration among entrepreneurial team members evolve if further parties, such as investors or managers get involved (for a theoretical paper examining faultiness between founders and investors, see Lim, Busenitz, & Chidambaram, 2013)? What constitutes a shift from an entrepreneurial team to a top management team? Interestingly, from a practical point of view, there is a lot of support for entrepreneurial teams of newly founded ventures in terms of accelerators/ incubators (S. L. Cohen, Bingham, & Hallen, 2018) and mentoring programs (Radu Lefebvre & Redien-Collot, 2013). However, support for entrepreneurial teams in managing the journey toward a large-scale established organization and its associated challenges is rare, mainly comprising advice by investors (Hellmann & Puri, 2002). Thus, future research on teams' evolution might be helpful for developing adequate support mechanisms for this important transition phase.

4.4 Avenues for future research: A dynamic entrepreneurial team lifecycle

Prior entrepreneurial team research has either focused on one of the stages of the lifecycle or has (often implicitly) suggested that teams move forward from one stage to another. This tendency is reflected in studies that include independent variables from the entrepreneurial team formation or collaboration stages and connected them to outcomes from later stages, such as the entrepreneurial team collaboration or dissolution stages. However, entrepreneurial team development is likely less linear than extant research has suggested. There might be events within

the team (e.g., changes in team composition) and developments within the venture (e.g., switching the opportunity pursued) that can trigger moving back to one of the earlier stages. Further, some concepts are important not only during one stage, but across all stages along the lifecycle. Taking into account the lifecycle in a more dynamic and holistic way gives rise to relevant and inspiring research questions that can significantly advance our understanding of entrepreneurial teams. Figure 6 presents exemplary research questions for each stage of the lifecycle but also highlights opportunities for future research including the entire lifecycle as well as entrepreneurial teams' non-linear development along the lifecycle.

Figure 6. Exemplary research questions taking a lifecycle perspective



4.4.1.1 Dynamism between lifecycle stages

Changes in teams' composition (i.e., the entry of a new member or the exit of an existing member) are disruptive (Guenther et al., 2016) and can thus move a team into the formation stage in which the team is set-up. First, the entry of a new team member in a founder-like role can trigger a re-allocation of equity between the entrepreneurial team members, especially when the venture is rather young and equity represents an important incentive (Chandler et al., 2005). Second, a change in role and task allocation seems likely (e.g., selecting a marketing expert as a new entrepreneurial team member who takes over all marketing and sales topics). Third, the re-formation of the entrepreneurial team will subsequently affect team collaboration. Not only is the entrepreneurial team larger, but a new member also needs to integrate into an existing team, which may be especially challenging if investors have forced the entry or influenced the selection of a more experienced manager, which is not unusual (Ferguson et al., 2016). So far, it is unclear if these re-formations of entrepreneurial teams follow the same patterns as original team development. In particular, it would be interesting to understand how mixed teams comprising founders and newly hired managers form contracts and how roles and tasks are allocated. Do the newcomers adapt to existing team processes and the existing team emergent states? Can certain team processes, such as team learning or task conflicts, make it easier for new members to integrate into the team?

Similarly, a team member exit constitutes "a particularly disruptive organizational change that alters a venture's stage of development and that may transfer it back to infancy" (Guenther et al., 2016, p. 847). For example, task and roles need to be re-allocated (among remaining teammates, employees, or to a new entrepreneurial team member), and if no protective mechanisms are in place, exiting and remaining team members need to resolve legal issues, including renegotiations around equity distribution. This re-formation will affect how the entrepreneurial team will collaborate in the future, in terms of team processes and emergent states. For example, when the exiting team member has left after a period of ongoing (task and relationship) conflict, the team might experience a more pleasant collective mood and less complicated decision-making processes. However, firing a co-founder with a close personal relationship to the remaining team members might also be (emotionally) challenging (Zolin et al., 2011), thus interfering with effective teamwork. Also, since "entrepreneurial team cognition is the product of team experiences, including team processes" (De Mol et al., 2015, p. 240), it seems likely that the entrepreneurial team's cognition needs to adapt to the new team setting.

Besides changes in team composition, venture development can initiate a re-formation of the team. For example, “a startup’s evolution can cause problems for even the most elegant early division of labor, if that division of labor fails to evolve” (Wasserman, 2012, p. 128). Moreover, changing the opportunity pursued in terms of a ‘pivot’ (Grimes, 2018) can stir role and task allocation without membership changes. For example, a pivot that changes the focus from developing an own technology internally into adapting an existing technology externally, might affect passion at the individual and team levels (Cardon, Post, et al., 2017). Furthermore, significant growth (Wasserman, 2012) or investor involvement (Hellmann & Puri, 2002) can impact the venture in a way that the entrepreneurial team needs to adjust its set-up (formation stage), which in turn affects team collaboration. For instance, after a significant financing round, the venture capital firm takes over equity, is on the board of directors, and finances marketing campaigns resulting in tremendous growth. Consequently, the entrepreneurial team does not have complete control over the venture (loss of equity), needs to change their decision making (some decision are made by the board of directors, but not all founders typically have a seat anymore; Wasserman, 2012), and needs to hire extensively (in a more professionalized manner; Hellmann & Puri, 2002). It seems likely that the entrepreneurial team will (at least partly) re-form its structure and collaborate differently.

Further, as illustrated in the example of the Instagram cofounders at the beginning of this essay, the entrepreneurial team’s collective journey does not have to end with their first venture. After selling the venture, some team members might stay as managers with the venture (like Kevin Systrom and Mike Krieger stayed for some years after Facebook bought Instagram), others might start a new venture directly after the exit or later or move on to a different career (Jenkins & McKelvie, 2017). Even after experiencing failure together, some teams decide to start a new venture together (this was also the case for Kevin Systrom and Mike Krieger, who experienced a joint failure with burbn before starting Instagram). While this decision to start a new venture might be less surprising for cofounders who have strong personal ties (e.g., spouses or family members; Brannon et al., 2013; Discua Cruz et al., 2013), entrepreneurial teams without these ties do not necessarily seem to shy away from their team, indicating that there is no clear need to distance from the team after failure.

Understanding why and how some entrepreneurial teams decide to *start a new venture together* (after failure or sale of the venture), is highly interesting and will enhance our understanding of the impact of a more sophisticated type of prior experience (Zheng et al., 2016). Moreover, it will inspire research on habitual and serial entrepreneurs (Iacobucci & Rosa, 2010; Parker,

2013) by including a social component. As self-efficacy plays an important role for an individual's re-entry (Hsu, Wiklund, & Cotton, 2017), it would be interesting to analyze the influence of collective efficacy on team's re-entry decision. Moreover, questions around the attribution of the failure arise: How do they attribute the blame for the failure? Only towards persons or circumstances outside the team's control? How do these members experience failure emotionally together? How does blaming influence a collective re-entry decision?

Importantly, starting a new venture with (parts of) the same entrepreneurial team after the previous venture has failed or has been sold, triggers a new entrepreneurial team formation stage. This formation stage is likely to differ from the initial formation stage in the first venture. First, entrepreneurial team members know each other very well, also in terms of more complex, underlying and non-observable characteristics such as values, time horizons, and commitment (Wasserman, 2012). Further, they can draw on experiences they made in the last venture together, which represents an important prior relationship affecting the team's heterogeneity and, in turn, venture outcomes (Jin et al., 2017). For example, it is likely that equity distribution is negotiated differently, not only because of the entrepreneurial team members' experiences in terms of legal clauses, financing options, and tax considerations, but also because they know how the other team members acted in prior equity negotiations (e.g., assessing perceived fairness; Breugst et al., 2015). Future research can study a broad range of questions around the re-entry and its consequences for team processes and venture outcomes: How does the joint failure or selling experience affect the new team formation (e.g., roles, equity) and collaboration (e.g., conflicts) stage? Do team members take the first venture as a 'blueprint' in terms of team behavior? Answering these questions will enhance our understanding of the emergence and functioning of serial and habitual entrepreneurial teams.

4.4.1.2 Concepts across lifecycle stages

While some concepts clearly belong to one lifecycle stage (e.g., initial team member characteristics), others infuse entrepreneurial team development at all stages of the lifecycle. First, while contracting (Blatt, 2009) is crucial during entrepreneurial team set-up, it is also highly important along the lifecycle. For example, while the initial decision about equity distribution is made during the team's formation as a first deal (Hellmann & Wasserman, 2017), in many ventures, equity distribution is not stable (Wasserman, 2012), so a dynamic perspective across all lifecycle stages is important in particular in growth-oriented ventures seeking equity-based financing

(Lim et al., 2013). Specifically, in the collaboration stage, in which the entrepreneurial team further develops the venture, investors are involved in strategic decision making since they are typically members of the board of directors (Wasserman, 2012) and a potentially emerging faultlines between the entrepreneurial team and investors may affect the venture's development (Lim et al., 2013). Moreover, all changes in the team's composition will change the equity distribution depending on whom the exiting team member sells his or her shares to (Piva & Rossi-Lamastra, 2017) or how the equity stake for the entering team member is negotiated. This re-allocation of equity requires new contracting within the team but will potentially also change team processes or emergent states because the team's composition as well as team members' control over the venture has changed.

Second, understanding how entrepreneurial teams cope (emotionally) with their entrepreneurial journey is not only relevant for the collaboration stage as outlined above but also for the formation and dissolution stage. For example, does a turbulent team formation stage (e.g., lack of clarity regarding who will join the team) impact team and venture development? How does the 'emotional rollercoaster' of the entrepreneurial journey shape entrepreneurial team decision making? How does collective mood develop (Perry-Smith & Coff, 2011) in the rollercoaster ride? In general, affective constructs are likely to play a role along the entire lifecycle. For example, entrepreneurial passion can play an important role in the selection of cofounders, but team members' passion can also adjust over time (Cardon, Post, et al., 2017)—both processes will impact entrepreneurial team collaboration. Moreover, entrepreneurial team passion is likely to shape the team's approach to dissolution: Teams with a shared passion for founding might be more likely to turn into serial entrepreneurial teams, whereas teams with a shared passion for developing and to professionalize and transform into top management teams. Interestingly, an entrepreneurial team's diversity in passion can drive the exit of individual team members (Cardon, Post, et al., 2017), but might also support a maturing firm keep its entrepreneurial spirit alive by developing and embracing new technologies as well as engaging in new opportunities (Kuratko, 2007).

Finally, although I described the team's set up in the stage of entrepreneurial team formation consistent with extant research, the set-up is likely to be highly dynamic and the team's structure will evolve as the venture does. For example, based on her expertise, an entrepreneurial team member is assigned the formal role of the CFO and she is responsible for all accounting tasks. While she is likely to stay the CFO in all stages, the tasks will change dramatically. At the beginning, she tracks all numbers and transfers all money herself, however, over time this

team member might not do any accounting task, but rather take over a leadership role and manage a team of accountants. These different roles will influence the collaboration within the entrepreneurial team. In the early stages, the CFO will be directly responsible for executing accounting tasks as discussed in entrepreneurial team meetings, whereas, in later stages, she will need to communicate the outcomes of team meetings to her accounting team members and present their work back to the team or invite some accountants to the meeting. These changes can be challenging for the entire team because when designing the team structure in the team formation stage, entrepreneurial teams might not be aware of this dynamism and the massive changes it will cause to their collaboration. Furthermore, depending on the team member's role within the entrepreneurial team, his or her exit needs to be prepared in a different way to reduce the potential outflow of resources and knowledge. How do entrepreneurial teams manage this challenge?

4.4.1.3 Conclusion

By systematically reviewing research on entrepreneurial teams focusing on the last ten years (2008-2018), I have provided a novel categorization of the existing knowledge in the field. Taking a lifecycle perspective instead of the previously used input-mediator-output framework (De Mol et al., 2015; Klotz et al., 2014) allowed me to identify new avenues for future research along the three stages of entrepreneurial team formation, collaboration, and dissolution. I presented these ideas at the end of each lifecycle stage. Moreover, combining the stages of the lifecycle in a nonlinear way opens up an exciting research agenda and allows for the integration of dynamic and processual aspects. The presented comprehensive research agenda offers interesting new avenues to better understand entrepreneurial teams and their development in a more holistic way.

5 Conclusion and avenues for future research

5.1 Summary of findings and contributions

This dissertation presents three essays using different methodological approaches to enhance our understanding of the entrepreneurial team's journey. Each of the essays offers specific insights into future-related key aspects of the journey and has implications for entrepreneurship and management scholars as well as practitioners. Further, the first and the second essay highlight the importance of studying the individuals within the team (i.e., individual entrepreneurial visions; diverse information items across individual team members), instead of focusing only on aggregated team inputs and outputs (i.e., collective vision; collective information).

Entrepreneurial team members and their envisioned future: By offering a novel conceptualization of entrepreneurial vision (essay I, Chapter 2) at the individual and team level, I enhance our understanding how entrepreneurial vision, i.e., *a founder's future image of the venture including his or her personal relationship with it*, shapes the social process of developing an opportunity (Dimov, 2007) and venture outcomes. Considering this personal aspect of entrepreneurial visions is in sharp contrast of prior conceptualizations of organizational vision in the entrepreneurial context which focus on venture related aspects taking a leadership perspective (Baum & Locke, 2004; Reid et al., 2017; Ruvio et al., 2010).

Further, my study provides novel insights into the actual content of visions, not only in terms of personal dimensions such as future ownership or values, but also regarding venture related content dimensions. While previous research has characterized visions in rather abstract terms like inspirational (Sosik & Dinger, 2007) or far-reaching (Berson et al., 2015), my rich data and inductive approach reveal the actual content dimensions such as growth, internationalization, or profit orientation. In contrast to organizational visions, some aspects of entrepreneurial visions in this study are not necessarily communicated to stakeholders or even teammates and, thus, cannot impact followers as proposed by research on visions taking a leadership perspective.

My novel and content focused definition of entrepreneurial vision at the individual level also has implication for research on vision in the entrepreneurial team context. The rich individual level data in my first essay reveal that team members' entrepreneurial visions can be

overlapping or compatible, but also incompatible, i.e., cannot be realized within the same venture. Surprisingly, in my study I find that entrepreneurial team members' incompatible entrepreneurial visions can coexist over time which is in stark contrast to previous research on organizational visions assuming that there is *one* vision for the venture either defined by one (lead) entrepreneur (Baum et al., 1998; Kirkpatrick et al., 2002; Ruvio et al., 2010) or jointly developed by founding team members (Ensley et al., 2003). Consequently, my first essay contributes to research on vision in the entrepreneurial team context by offering a novel conceptualization of *entrepreneurial vision congruence as the extent to which entrepreneurial visions held by founding team members can be realized simultaneously within the same venture*.

Heterogeneity in entrepreneurial teams taking an upper echelon perspective: My first essay contributes to the upper echelon perspective (Carpenter et al., 2004; Jin et al., 2017) by introducing vision incongruence as a novel type of team heterogeneity. While most research on upper echelons has relied on observable demographics (Jin et al., 2017; Ndofor et al., 2015), this essay highlights the importance of gathering rich data from each entrepreneurial team member to capture the team's heterogeneity.

Additionally, my first essay contributes to our understanding of how complex types and combinations of heterogeneity can emerge. In this study, I find that *perceived status homogeneity* triggered *heterogeneity* in team members' entrepreneurial visions. These findings are interesting since they indicate that sometimes observable characteristics such as status as defined by individuals' formal roles (e.g., Park et al., 2011) might be insufficient in capturing relevant aspects of the team's heterogeneity. Further, these findings highlight the importance to understand mutual dependencies between different heterogeneity types, which has not been in the focus of previous research.

Entrepreneurial teams and their opportunities: My dissertation offers novel insights into the nexus of entrepreneurial teams and the opportunities they develop. First, the second essay contributes to our understanding how novice entrepreneurial teams whose members lack familiarity while facing high levels of uncertainty and hidden-profile type of situations, decide which opportunity they want to follow. While this decision represents one of the most important decisions in the entrepreneurial journey (Gruber et al., 2013), previous research mainly focused on individual entrepreneurs' opportunity selection (Shepherd et al., 2015). At the team level a few studies have explored how the team's knowledge shapes the variety of opportunities identified (Gruber et al., 2012; Gruber et al., 2013), but they have not focused on the decision-making process itself. This second essay in my dissertation shows how the benefits of information

elaboration when selecting an entrepreneurial opportunity depend on a combination of environmental conditions (i.e., information reliability) and team processes (i.e., team reflection).

Focusing on opportunity development *over time*, the first essay emphasizes the dynamic nature of opportunities and contrasts the more traditional view that opportunities are discovered/created, evaluated, and exploited/rejected without changing their nature fundamentally. More specifically, I introduce two distinct opportunity-development paths, namely focused (triggered by vision congruence) and comprehensive (triggered by vision incongruence) opportunity development. Following the comprehensive opportunity-development path implies changing the opportunity more broadly and more openly compared to teams following the focused path. By showing that the *team members'* vision (in)congruence triggers these distinct paths and that both paths can lead to successful opportunity commercialization or failure depending on the *team's* behavior, I contribute to our understanding of opportunity development as a social process (Dimov, 2007). In line with theoretical work (Gioia et al., 2012) on ambiguous *organizational* visions arguing that lower stakeholder commitment to these visions facilitates firms' strategic change, results from the first essay suggest that teams with incongruent entrepreneurial visions are also more open towards changes.

By showing how the entrepreneurial team's characteristics and team behavior shape the (successful) development process of the opportunity, I offer a novel perspective on opportunity development: While previous (academic and popular) literature on opportunity changes has stressed the role of external feedback for more radically changing (i.e., pivoting) the opportunity (Crilly, 2018; Grimes, 2018; McMullen, 2017), my first essay highlights the importance of internal factors—namely the entrepreneurial team members' characteristics, their heterogeneity and team behavior in the face of challenges—for successful opportunity development. Importantly, I find that both opportunity-development paths can lead to successful opportunity commercialization or failure. Explaining how the team shapes opportunity changes enhances our understanding of 'pivots', which has become a prominent term to capture more radical changes to an idea (Ries, 2011) and has recently evoked interest in the entrepreneurship literature as well (Grimes, 2018).

Team processes and entrepreneurial outcomes: My dissertation also adds to our understanding of entrepreneurial team processes more generally. The first essay highlights the importance of certain team processes for successful opportunity commercialization. While the study reveals that for entrepreneurial teams engaging in focused opportunity development, high levels of proactivity when tackling threatening challenges is required to be successful, teams on the

comprehensive opportunity-development path need to act professionally. To some extent this finding that actual team processes and not the vision itself or its impact on followers is associated with high performance—as previous research suggests (Baum & Locke, 2004; Kroll et al., 2007)—is surprising. First, entrepreneurial teams developing their opportunity along the focused path need to show high levels of proactivity when facing challenges. Previous research suggests that science-based entrepreneurial teams that share cognitive schema and identify with the venture's external communities tend to experience rigidity in decision making which limits their social capital building with non-scientists and thus, lowers performance (Maurer & Ebers, 2006). I complement these findings by showing that shared cognitive schemata based on congruent visions do not necessarily lead to rigid decision making; rather, some of the teams showed high levels of proactivity in terms of finding alternative and creative (albeit not radically different) solutions. Thus, my first essay suggests that the link between entrepreneurial teams' shared cognitive schemata (at least in terms on congruent visions) and decision rigidity is less straight forward than previously assumed. Teams that act proactively when facing challenges while following the focused opportunity-development path can be successful.

Second, in my sample, entrepreneurial teams following the comprehensive opportunity-development path need to behave professionally to be successful. In the case ventures, professionalism is manifest for example in terms of following established rules when discussing decision alternatives. Some studies have emphasized the downside of decision making routines because they “put decision-makers on automatic in their interpretation of strategic issues” (Dutton, 1993, p. 351) and focus their attention on discrete segments of the information environment while neglecting others (Gavetti & Rivkin, 2007; Ocasio, 1997). However, the high complexity of integrating incongruent visions and diverse opinions about the venture's future in a team environment with unclear internal structures (Blatt, 2009) seems to require a certain level of formalism and routinization for successful opportunity development. This finding also indicates that the professionalization of management processes can be important in early venture development phases (Clarysse & Moray, 2004).

Finally, the second essay of this dissertation contributes to the decision-making literature by providing a more nuanced understanding of the interplay of team processes in entrepreneurial decision-making. While most prior research on decision making has focused on the individual decision maker and how his or her individual characteristics impact entrepreneurial decisions (Shepherd et al., 2015), it has not sufficiently explored team processes when entrepreneurial teams make decisions. Important entrepreneurial decisions, such as selecting the opportunity to

be pursued, are challenging in teams because of hidden profile-type situations, lacking reliability of information, large amounts of information to be considered, and lacking team member familiarity. As the main contribution, essay II suggests that the benefits of information elaboration depend on team external (i.e., the reliability of the information) and team internal contingencies (i.e., team reflection). These important contingencies are in contrast to previous work assuming that information elaboration is generally beneficial when team members hold diverse information (Mell et al., 2014; Nederveen Pieterse et al., 2011; van Knippenberg et al., 2004). However, in this study, depending on the team internal and external contingencies, information elaboration is beneficial, irrelevant, or even detrimental to team decision quality.

Furthermore, essay II explores a novel outcome of entrepreneurial team processes. Specifically, the typical dependent variables capture firm-level outcomes (see Klotz et al., 2014 for a review), with only few studies capturing members' (Chowdhury, 2005) or external raters' assessments of team performance (Perry-Smith & Coff, 2011). However, firm performance is rather distant from actual team processes and the linking mechanisms are hardly observable. Moreover, assessments of team performance are often broad and depend on team members' own or others' perspectives. Thus, I suggest that focusing on the team's performance in specific decision-making tasks provides additional insights how team processes influence important (objective) outcomes allowing for causal conclusions.

The entrepreneurial team's lifecycle: This dissertation highlights the importance to study entrepreneurial teams *along their lifecycles*. First, only by observing the teams over long time periods in the first study (Chapter 2), I could understand how not only the initial team composition as typically investigated in upper echelon studies (Jin et al., 2017), but team member exit over time in the team as well as specific team processes affect vision (in)congruence and, in turn the opportunity path followed. I observe that an exit of an entrepreneurial team member can increase vision congruence and thereby provide a more nuanced understanding of dynamism in team heterogeneity, which is typically studied as a stable construct at the formation stage of the entrepreneurial team (Jin et al., 2017), thus neglecting potential later changes of the entrepreneurial team. Moreover, the first essay shows that certain team processes take time to unfold. For example, one case team explicitly wanted to increase vision congruence and thus, conducted workshops and strategy weekends over an extended time period. Only collecting data on the team members from initial formation to collaboration allows me to understand how team processes unfold over time, and their impact on opportunity development and outcomes. Further, in essay III, I develop a comprehensive research agenda by highlighting dynamic and

overarching elements in the entrepreneurial team's lifecycle. Pursuing the research questions I outline in this essay will promote our understanding of entrepreneurial teams along their lifecycle and shed light into so far under-researched areas. Especially, research on the later stages of the entrepreneurial lifecycle is currently sparse and thus offers a variety of interesting avenues for future research.

Practical implications: This dissertation offers several implications for entrepreneurs, investors, entrepreneurship educators, and mentors. Both, entrepreneurs and their investors should pay more attention to non-obvious types of team heterogeneity such as entrepreneurial vision incongruence, rather than relying on information provided in short resumes, business plans, or pitch presentations. Findings from this dissertation encourage entrepreneurial team members to be aware of perceived status differences within the team since they might trigger vision (in)congruence, which has key implications for the team behavior required to make focused and comprehensive opportunity development successful. Specifically, being aware that one team member is attributed high status should encourage teams to be proactive (e.g., looking for and developing alternatives, discuss creative ways of solving a problem) in face of challenges, which is important when taking the focused opportunity-development path. In contrast, for entrepreneurial teams with attributed status equality, it seems important to act professionally (e.g., by basing decisions on key performance indicators, listening to different opinions, documenting decision) while facing challenges on the comprehensive opportunity-development path.

Further, the first essay also suggests that entrepreneurial teams do not necessarily have to follow the popular trend to 'pivot' (Ries, 2011) their opportunities frequently and extensively to bring them successfully to market. Approaches like 'The Lean Startup Method' typically conceptualize pivoting as major changes in the opportunity triggered by external feedback (Ries, 2011). In contrast, I highlight the importance of team characteristics shaping the way of how entrepreneurial teams develop opportunities. Consequently, this dissertation encourages entrepreneurs, but also entrepreneurship educators and mentors, to take a more balanced perspective when discussing changes in entrepreneurial opportunities. While external feedback in terms of customer, investor, or more general expert feedback, always is important when developing opportunities, the team itself seems to be a key internal factor explaining different opportunity development trajectories. Importantly, my dissertation also suggests that pivoting is not necessary for successful opportunity commercialization. Developing the opportunity less broadly (i.e., with fewer and less extensive pivots) can also lead to successful commercialization.

It is important to note, however, that entrepreneurs should approach challenging situation differently depending on the extensiveness of pivoting—while extensive pivoting requires professionalism, low levels of pivoting require proactivity in face of challenges.

The second essay reminds entrepreneurs of the complexity of making high-quality decisions. Most importantly, the essay provides a more nuanced understanding of information elaboration showing that when team members have diverse information, more information elaboration is not always better. While popular literature suggests that more information in terms of gathering more market data and conducting more customer and expert interviews is beneficial for making decisions about opportunities (Ries, 2011), the second essay of this dissertation provides a more nuanced understanding of how this information should be processed within the team. In fact, it shows that information elaboration is not always beneficial for the quality of the decision. Only for teams building on reliable information and engaging in little reflection, I find the positive effect of information elaboration on team decision quality that has been postulated and empirically found by the majority of studies on information elaboration (e.g., Homan et al., 2007; Mell et al., 2014; Nederveen Pieterse et al., 2011; Rico et al., 2012). This suggests that for the team being aware of the reliability of the information and being aware of the degree of their team reflection might be valuable for engaging in information elaboration within the team.

5.2 Avenues for future research

This dissertation focuses on the journey of entrepreneurial teams when exploring their ventures' future. In this final chapter I present ideas for future research that go beyond the ideas I derived from the individual essays' limitations. Importantly, while essay III provides a roadmap for future research on entrepreneurial teams, I will now focus on important topics along the entrepreneurial journey on the venture and individual level of analysis. In particular, I suggest future research opportunities regarding the topics of entrepreneurial opportunities, exit, leadership, and the entrepreneur's personal view of a new venture.

Entrepreneurial opportunities: While this dissertation reveals new insights into the selection (essay II) and development (essay I) of entrepreneurial opportunities, future research can focus on a variety of topics to contribute to our understanding of opportunities along the entrepreneurial journey. At the very beginning of the journey, the opportunity emerges, which has been a major focus in the previous entrepreneurship literature (Davidsson, 2015). Further, we know that leaving the venture they created is difficult for entrepreneurs since they need to

psychologically disengage from this venture (Rouse, 2016). However, we still do not fully understand how entrepreneurs cognitively and emotionally attach to their ventures which –at the very beginning – are hardly more than the opportunity pursued. For example, how do entrepreneurs develop cognitive and emotional attachment to an idea that was developed by someone else? This might not only be the case for entrepreneurs joining an entrepreneurial team after the early development stage, but also in contexts such as academic or corporate spin-offs in which the inventor does not become the (solo) founder or in the context of ‘company builders,’ which systematically develop ideas and then recruit entrepreneurs externally to start opportunity exploitation. Further, it might be interesting to understand the emergence of attachment in the context of sustainable entrepreneurship in which the entrepreneur’s personal values and identity play an important role (Belz & Binder, 2017; Binder & Belz, 2015; Shepherd & Patzelt, 2011). Understanding the emergence of attachment will also provide new insights into how entrepreneurs change their opportunities along the entrepreneurial journey (Grimes, 2018).

Further, we lack more insights into opportunity development (Ardichvili, Cardozo, & Ray, 2003) over time and with a focus on the social dimension of the process (Dimov, 2007). In my sample of rather young ventures (essay I), the entrepreneurial teams were mainly responsible to develop the opportunity. However, some startups grow very fast implying that (i) employees take over (partly) control of the development, (ii) many new ventures involve experts as mentors for opportunity development, and (iii) typically investors who are part of the board of directors (Wasserman, 2012) are involved into major decisions on opportunity development. Since investors often increase the professionalization in new ventures (Hellmann & Puri, 2002), it seems likely that they also influence the most central process in new ventures, namely the development of the opportunity. For example, especially new ventures seeking or having received venture capital financing seem to follow systematic opportunity development approaches such as the popular ‘lean startup’ method (Ries, 2011). A core element of this approach is the extensive testing of ideas and adapting (i.e., pivoting) the opportunities whenever (external) feedback suggests to do so. While research has recently started to explore pivoting (Grimes, 2018), future research can study pivots taking a process perspective and accounting for the social and emotional dimensions of the process.

Exit: This dissertation provides new insights into entrepreneurial exit at the individual and team level addressing a call on more research on this topic (DeTienne et al., 2015; Wennberg & DeTienne, 2014). At the individual level, the first essay reveals that some entrepreneurs envision exit in terms of selling their venture right from the beginning, knowing that they may not realize the exit since other team members disagree on this vision. Future research can study how the individual entrepreneurs experience the fact that their envisioned future to exit the venture may never be realized and how that affects their emotions and feelings towards the venture, their individual motivation (Shane, Locke, & Collins, 2003) and their entrepreneurial effort (Breugst & Shepherd, 2016). Further, while important stakeholders like employees or customers might not be aware of the initial entrepreneurial vision of exiting the venture eventually, over time they may become aware of this possibility (e.g., venture capital firms' investments can trigger aiming for a later exit), to date, we do not know how these stakeholders react to the vision of a potential future entrepreneurial exit (which are rather common for e.g., biotechnology companies; Schweizer, 2005). For example, employees might be demotivated, and customers might fear that the entrepreneurial team members will not stay for long with the venture, rendering the venture's future uncertain. Additionally, future research can explore how the work/business-family/life interface (Hsu et al., 2016; Jennings & McDougald, 2007) influences the emergence of an entrepreneurial vision aiming to sell the venture.

Further, future research on exit at the venture level can take a process perspective to understand the steps from receiving first negative feedback (e.g., from customers on the product) to the decision to close the venture resulting in a more detailed understanding of the failure *process*. For example, while the second essay provides a nuanced understanding of opportunity selection decisions, we lack insights into the decision to discontinue the pursuit of an opportunity. We know that entrepreneurial projects in corporate settings are often difficult to terminate (Behrens & Patzelt, 2016) and that decision makers experience a multitude of negative emotions both before and after the decision (Shepherd, Patzelt, Williams, & Warnecke, 2014; Shepherd, Patzelt, & Wolfe, 2011). Given that entrepreneurs' are especially attached to their ventures (Rouse, 2016), what role do their emotions and feelings and perceived uncertainty about their personal future after exit play in the discontinuation decision? What roles do investors take in the decision to discontinue? What are personal considerations that shape the decision to keep a 'creeping death' venture alive?

Leading the new venture into the future: By introducing entrepreneurial visions (essay I), this dissertation highlights that leadership in new ventures might be more complex than previously

assumed. First, in previous literature on the intersection of entrepreneurship and leadership (Reid et al., 2017), entrepreneurial vision is conceptualized as the *one* organizational vision communicated to the stakeholders (Baum et al., 1998; Kirkpatrick et al., 2002). However, this dissertation suggests that there can be various types of visions within one venture (e.g., organizational vision and different entrepreneurial visions). While this dissertation has focused on how entrepreneurial visions shape the venture's future, future research can take a stakeholder perspective to address questions like the following: How do investors, customers, or employees perceive the venture's and entrepreneurial team members' visions? Which types (e.g., rather broad vs. specifically connected to the opportunity) of organizational visions do investors prefer? Are employees aware of entrepreneurial visions of individual team members and how do they cope with potential incongruence among members' entrepreneurial visions and/or the organizational vision? How are these more abstract visions translated into more specific strategies (Mintzberg, 1978) and goals (Locke & Latham, 2002) guiding the employees' daily work (e.g., many startups follow Google and use the 'objectives and key results (OKRs)' to manage a growing organization; Johnson & Senges, 2010)?

While the prior potential research questions focus on stakeholders affected by leadership, another stream of research can focus on the process of *becoming* an entrepreneurial leader. In contrast to managers in established organizations who typically have access to leadership trainings (Lacerenza, Reyes, Marlow, Joseph, & Salas, 2017) and become responsible for increasingly larger teams in a stepwise approach (e.g., team leader, department head, vice president, CEO), in the entrepreneurship context leaders often have little or no organizational support (as the organization is still emerging). Researchers can study how entrepreneurs develop into such a leadership role. For example, imagine the development of Facebook's founder and CEO Mark Zuckerberg from being a student to the CEO of a publicly listed organization with over 33,000 employees worldwide (Facebook, 2018). Understanding the emergence of entrepreneurial leaders and their personal development over time (e.g., how that affects their passion and how that is perceived by employees; Breugst et al., 2012) will not only contribute to the entrepreneurship literature, but also inform the leadership literature.

The personal dimension of new ventures: By highlighting the personal aspects of entrepreneurial visions in the first essay, I demonstrate how not only business related but also private aspects guide the venture's development into the future. While more recently research has acknowledged that the entrepreneur and his or her venture are closely interlinked in terms of identity (Powell & Baker, 2014) and related aspects such as passion (Cardon, Glauser, &

Murnieks, 2017; Cardon et al., 2013; Cardon et al., 2009) or necessary disengagement when the entrepreneur leaves the venture (Rouse, 2016), there are many more facets how the entrepreneur's private life influences the venture and vice versa; indeed, research on this intersection is rare and fragmented. For example, we know that female growth-oriented entrepreneurs need to mitigate work-life conflict to handle venture related and private role demands (Shelton, 2006). We know that work-life conflict can be increased with the use of communication technologies after hours, which are likely to be used by employees with higher ambitions and job involvement (Boswell & Olson-Buchanan, 2007). While the study by Boswell and Olson-Buchanan focuses on employees, entrepreneurs are typically highly ambitious and involved, thus, understanding their work-life conflicts and behaviors, rather than focusing on business related aspects only, might be relevant to understand their well-being (Stephan, 2018).

To develop this understanding, future research can study a broad range of research questions, such as: How and to what extent do entrepreneurs define work-life boundaries in terms of people involved, time, or location? How do entrepreneurs who found their ventures with family members (Discua Cruz et al., 2013) manage these boundaries? How do the boundaries emerge and evolve over time? If entrepreneurs do not have explicit boundaries, how do they handle liminality (Conroy & O'Leary-Kelly, 2014) between roles (e.g., am I talking to my business partner or spouse currently)? How do they avoid spill-over effects of work-related task conflicts into relationship conflicts at home? What role do spouses take in entrepreneurs' coping with uncertainty, challenges, and actual risks such as investing private money, or being privately liable? To what extent do spouses act as sparring partners for pre-discussing major business decisions (e.g., investments, internationalization, discontinuation)? Answering these questions will enhance our understanding of how personal, life-related aspects shape the entrepreneur's well-being, but also the venture and its future.

In conclusion, this dissertation provides new insights into the journey of entrepreneurial teams when exploring their ventures' future. First, by conceptualizing entrepreneurial vision incongruence as a future-oriented and content-focused type of heterogeneity, I contribute to the entrepreneurship, but also the broader management literature taking an upper echelon perspective. Second, the results from essay I and essay II on opportunity selection and development offer new insight into a central topic of entrepreneurship research: understanding entrepreneurial opportunities. Third, this dissertation offers a more nuanced and holistic perspective on important team processes such as information elaboration, team reflection, and decision-making. Finally,

by providing a roadmap for future research on entrepreneurial teams and beyond, I hope to stimulate studies on the fascinating and important topic how entrepreneurial teams collectively explore their ventures' future.

6 References

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7 Appendix

7.1 Appendix Essay I: Entrepreneurial Visions in Founding Teams: Conceptualization, Emergence, and Effects on Opportunity Development

7.1.1 Video excerpt team meeting C1 (high proactivity)

At the time of the videotaped team meeting, C1 faced a challenging situation because they had almost no financial resources and needed to manage their projects as a product-development company and promote their own products as well as their own online shop at the same time. The team meeting was structured based on a list of topics both team members had written in their notebooks. During the meeting, Anna and Anthony were taking notes on their individual to-do lists. In the following excerpt of the videotaped team meeting, Anna and Anthony discussed how they can proactively find an alternative solution (instead of hiring a full-time employee) to promote their own products and their own shop, acknowledging both their limited financial resources and the fact that none of the founders could do public relations and marketing tasks because of time constraints. In this discussion, they proactively found a flexible solution—namely, sharing an intern and the associated costs with another venture (founded by Mike) instead of having no intern at all (and thereby no time for public relations and marketing at all).

Anna: Any ideas? Did you think about something?

Anthony: For me it is key that someone is taking . . .

Anna: Taking care?

Anthony: Taking care. At least with a 50% position to do PR. Find approaches to do PR which are free of charge or cheap—online PR, guerilla PR: I don't know.

Anna: Yes, that is what we need to discuss with Mike.

Anthony: Exactly, I can see in our everyday life that we cannot communicate that we have [our own new product].

Anna: One could do a lot of PR if one had the time for doing it . . . so, we will talk about—no not tomorrow, there is too much else—so, we talk to Mike.

Anthony: We just call him later today and request a meeting with him only for that topic.

[Both take notes]

Anthony: How can we imagine this [shared intern idea]? As far as I am concerned, this person can work from our office.

Anna: Yes, as far as I am concerned as well.

Anthony: For my part, the person can work from Mike's office as well at times.

Anna: I think that makes sense. I think it is important [that] the person will be also there [in Mike's office]. We cannot afford more than an intern.

Anthony: And, I mean it is a three-minute walk [between their and Mike's office].

Anna: Yes, that is no problem at all. So, we say that we split it [the intern's time]—we can discuss this with Mike. The [intern] is 2.5 days at Mike's [office] and stays 2.5 days with us.

[Continue to discuss the duration of the internship, places to advertise the internship, and the task profile of the intern]

7.1.2 Video excerpt team meeting I1 (high professionalism)

The team assistant (Mary) was present during the complete meeting and took notes on a laptop, which are the basis for the minutes. All founding team members had a written agenda in front of them and a project list describing the status of each project. Each project was then presented by the employee who was responsible for the project and only joined the meeting for the presentation. In the following episode, first, team assistant Mary gave an overview on the project and then an employee presented the project in more detail. The presentation as well as the discussion afterward were structured and driven by facts and numbers (e.g., Facebook likes, conversation rates, user value in euros, hours per person spent on the project, project budget), which they used as standard key performance indicators. The team discussed a pretest before establishing a new project, which was a standard process for them.

Elias: There is already the Facebook page [project name]. There are 700 [local] users.

Elon: So, no need to build new pages . . .

Evan: . . . I can see already the second conversion rate, if it is bad, I do not need to put effort into building the first one.

Evan: If that [testing the Facebook pages] requires the [work] resources of one day [per month], I would say, we make an amendment [to the minutes] which is very precisely worded—that we verify again that it is totally clear in there. There are two things: first, to continue the three to four ongoing topics

[All are reading (in part loudly) the relevant part of the minutes, which are typed in parallel by team assistant Mary and shown on the large screen; mumbling]

Evan: That we have it in the minutes clearly defined: the three to five [Facebook pages] with at maximum one day per month. There we have 700 to 800 visits. Then we will see how much we have one month later. If it will be 650 [in addition], then I would say we stick to the one day [per month]. If it is going in the right direction, we need to consider turning it into a project, which picks that up, or is it extended continuously. The second aspect, for three to four city [Facebook] pages . . .

Mary: Three.

Elias: Let's do one, or?

Evan: Two would be good, if it is not more effort. . . . Then we look at the numbers with half a day per month [effort].

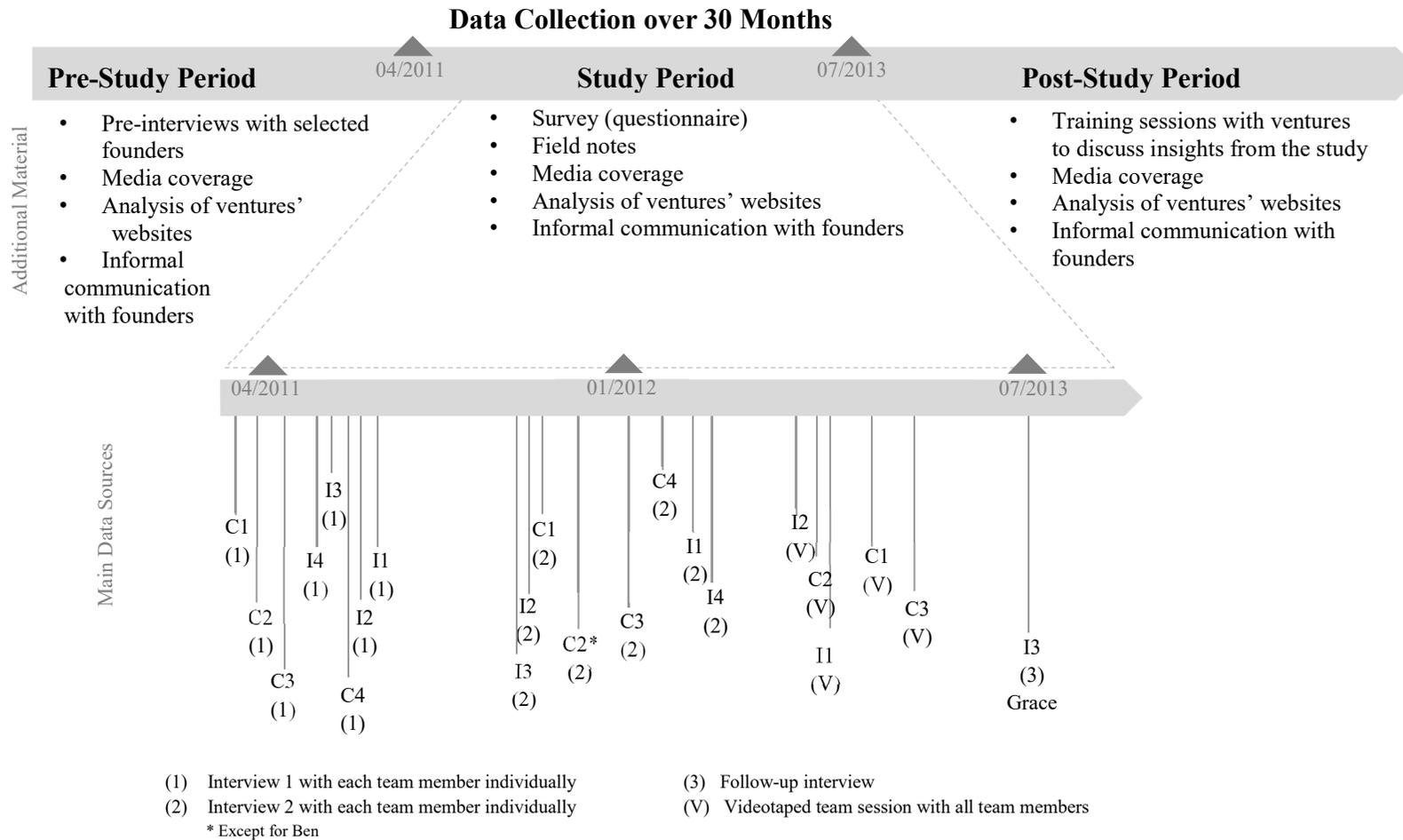
[Discuss when they will reevaluate the project again]

Evan: [We will look at it] in the meeting two months from now. The maximum amount of time we invest is important here, not that it gets out of hand.

[Short discussion of details and project-management quality; then all agree, and the next project is discussed]

7.1.3 Data collection

Figure 7. Data collection



7.1.4 Questions guiding the interviews

First interview (24 open-ended question and additional follow-up questions as needed):

Venture: At first, I am interested in what your company is doing exactly. Would you please briefly explain that to me? | How did the business idea come up? What were the most important steps or events that took your company to its current status? | If not answered yet: What have you done before (professional and educational background)? | Have there been any specific successes/any specific challenges during the last months? | How did you get to know each other as a team? | What is the function of the different team members within the company? | Did you have these areas of responsibility from the beginning onward? Did it change over time? | Now as you described the “functional distribution” within your company, how is this reflected in the distribution of shares among the team? | Taking a look into the future, what are the most important milestones/goals for your company?

Individual views on venture: Would you please describe a typical day as you personally experience it in the company? | This sounds like a lot of work. How much time do you/your partners invest in the company? | What is it that you like the most regarding your work at this company? | What is it that you don’t like with regard to your work? | What do you think you would do if you were not working for this company?

Vision: How would you describe *your vision* for the venture? If not answered yet: If you were to describe your company in the further future—for example, 10 years from now—what is it that you would like to be able to say? | How would you describe your personal vision for your life? (Follow-up questions for clarification, for example, on communication, timelines, etc.)

Collaboration within founding team: How would you describe your team interactions in general? | How would you describe your communication within the team? | If teams also interact privately: How would you describe private communication versus business communication? | How would you describe the feedback culture within your team? | You’ve already mentioned your “functional distribution” within the company; apart from that, how would you describe the different roles within the team? | Did these roles change over time? | Looking at your teammates, what do they have that inspires you most? What do you think it is that your colleagues would find inspiring in yourself? | Having all those experiences now, if you would have the chance to turn back the hands of time and start over again with your team, what is it that you would definitely keep doing as you did in the past? What is it that you would change?

Second interview (28 open-ended questions and additional follow-on questions as needed):

Changes of team, opportunity, and venture: What has happened since our last interview with the products/service/venture/team? | Why did you change these aspects? | [Three specific follow-up questions to understand changes] | How is the team spirit at the moment? Did anything change? | What could you change to be more successful? | Are you and your teammates contributing equally to success? | Has that changed over time?

Team decision processes: Could you describe the most important decision in the last months? | Please describe it detail. What was the decision about? Product/service/team? | How did you make the decision? | What did the process look like? The steps? | Did you make changes to the processes? | Were all team members aligned, or were there fault lines? | In the end, are you happy with the decision? | Are you happy with the process?

Coping with challenges and conflicts: What was the most challenging situation? | Could you describe the challenges in detail? | How did you cope as team with the challenge? | What did you learn? | Could it happen again? Why? | Could you have done anything differently? | Are there any ongoing conflicts? | Are there any potential conflicts that you as a team are not talking about? | If yes: Why do you not talk about them? | What would change if your teammates would leave the venture? | What are the next steps you are looking forward to?

Follow-up interview:

On case-by-case basis depending on the team’s situation. For example, we asked questions around team members, selling the venture, and venture failure.

7.1.5 Examples of vision (in)congruence

Vision Congruence—Team C1: Statements from First (1) and Second (2) Interviews

Anthony: “My vision is to build the venture [so] that we have a certain popularity in [our] areas, the markets we are focusing on [kids’ products]. That we get orders from these companies. And to position ourselves so that we can choose the projects according to our ethical guidelines. My goal is to say ‘Ok that is in line with our moral standards’—we agree with that—that’s brand building for our venture. If we manage to develop a consistent image of what we do, I believe, it will be a self-fulfilling prophecy. But I think we should continue to aim for the service offering and developing our own products. It is our aim to develop [our] own products and offer services so that they can balance each other and the venture can live from either of them theoretically”.

[When asked about their products] “We want to develop sustainable and valuable products from an ecological point of view” (all 1).

Anna: “Vision for our venture: expedient, beautiful, sustainable products for kids. For international companies as a services provider—location does not matter as long as they are good enough according to our moral standards. By saying this I do not mean that we are arrogant or so—but we want the customers [to] really follow our moral guideline, that they [do] something purposeful, not like [former employer—describes how they spend a lot of money for sport boats, real estate, etc.]. We do not want to work for [previous employer] who earns a lot of money without giving back”. The vision [is] also that we in 10 years have a company which provides for us so that we can live a good life. We do not aim to become rich, we should be able to live a good life and also the persons who may work for us. It should be fun working here and yes, I want to look in the mirror and say ‘yes, what we are doing is good from a moral perspective.’ I don’t want to be a big moralizer, but yes I don’t want to do anything bad to the world” (all 1).

Vision Incongruence—Team I4: Statements from First (1) and Second (2) Interviews

Harold: “My personal vision is to build a successful tech company. I can’t specify it in detail right now, but we want to be successful not because we are just working long hours, but by developing an innovative, powerful technology. . . . That’s my vision. So, in the midterm it is very interesting to sell such a technology. That’s the final strategic aim for me, that we are able to develop the technology to a degree where it is interesting for another company to take it over. [Interviewer asks if that would mean selling the company] Yes, exactly. Making sure that we have smart technology that others find interesting . . . and will buy respectively. [When asked about timeline for exit] Hard to say. For me personally, I do not have time pressure as long as the company is doing well” (all 1).

Other relevant statements: “In some ways we all have the same vision. But maybe it is not exactly the same for everyone what we imagine, but we are all somehow visionary guys”(1).

Hugh: “My personal vision for [I4]? That’s the strategic approach for the venture. That’s easier to describe for two or three years from now. In two or three years, I would say, a software provider established on different markets which we assessed as promising, with a product which is competitive, with a stable revenue and cash basis. Until then we need to find out what’s the product, what are the best markets. Since we are at the beginning, this is not fixed yet. Also [we need to define] whether we want to focus on technology or not? We are good in research, finding algorithms, etc. Or do we just want to have the best product with fewer features and focus on sales? But the vision is actually to be successful and so far it’s going well. [Interviewer asked about the venture 10 years from now]: “So either we are not there anymore or the technologies or the product have been bought by an accordingly big player or it has become an established provider with a few hundred employees— a ‘niche’ player—taking care of the software service and the further development. Until now we are just a one-product company [on the market at this moment], in 10 years we need to have two or three new products to survive. But I do not want to worry now. . . . Ok, so we exist or if the technology will not be accepted, we will disappear. Then we will meet for memorial evenings”. (all 1)

Other relevant statements: “The question is whether one makes an exit or [good] revenues. Therefore, one needs to scale and sell internationally”. “Sometimes we have problems synchronizing our visions” [Interviewer asked: “Do you mean concrete features of the product or how to develop the venture long term?”] “Also how we develop the venture long term, since we are still in the processes of defining the concept. So, [defining] the general direction. Of course, we all want to be successful. And we should work together well and so on. But to align our visions . . . we will do a workshop [date] so that we try to synchronize a bit”.

[When asked what to improve when starting a venture] “One could try to align visions better at the beginning and to start a bit slower”. [When asked if they are trying to align their visions for the first time] “No, we do that more often. We also had these strategy workshops, we need to answer a broad set of questions: Do we want venture capital? How to work out the [legal] details? What should our product be? Which markets do we want to be in? How fast and huge do we want to grow? How to handle if one of us [the founders] dies or wants to do [job

alternative described] or something else? And then, again and again new aspects need to be discussed as well. . . Should we expand into new business areas?” (all 1).

Harris: “I want to be a successful entrepreneur—by developing [our] own ideas and building a venture . . . growing the venture. . . . In the best case the venture’s focus is on technology and innovation, something involving analytics and math. . . . Yes, indeed a successful venture which is innovative and which keeps developing its products and technologies further and further to access new technologies and new markets. I am not going to look for exit two years from now. I imagine to build something for the long term. . . . My vision would be to have about 100 employees three years from now” (all 1)..

Other relevant statements: [When asked about their visions] “There were different opinions but only because we had not really thought it through” . [When asked about important decisions since Interview 1] “One of the most important decisions had been to focus our technology and product portfolio extremely. Although we have sought two kinds of technologies so far: one simulation and one analysis technology. We narrowed our focus strategically and said that we focus completely on the analysis technology and established that as a standard technology for that area worldwide. The simulation technology, which is more like a consulting tool, we stopped doing that and do not develop [it] further. We now do not necessarily follow up every inquiry regarding that topic. Short term, there are incentives to sell a lot of consulting, but this keeps us from our long-term strategic vision. We have to focus because it is important how we can reach that vision. I don’t know exactly who had the big idea that we were to be less focused, but it was going around in our heads for a while . . . and we decided this probably on one of the strategy weekends. . . . I think it makes sense” (all 2).

7.2 Appendix Essay II: Information Reliability and Team Reflection as Contingencies of the Relationship between Information Elaboration and Team Decision Quality

7.2.1 List of information items and their distribution for the team task

Table 11. List of information items and their distribution for the team task

List of information items and their distribution for the team task		
Information item	Type	Team member
<i>Alternative 1 (best solution)</i>		
You have found a potential investor.	Positive	Financial manager
You have found reliable suppliers.	Positive	Financial manager
You have already contacted a firm that will help you market the product.	Positive	Marketing manager
This product has international sales potential.	Positive	Marketing manager
You can apply for a patent to protect the product from imitation.	Positive	Operations manager
A fully developed prototype of this product already exists.	Positive	Operations manager
High investment costs are necessary to bring the product to market.	Negative	All
The target group for your product is unclear.	Negative	All
<i>Alternative 2</i>		
Your local bank is likely to provide you with a loan.	Positive	All
Due to a potential alliance with a nearby firm, you can obtain additional resources.	Positive	All
The product satisfies the wishes and needs of many potential customers.	Positive	All
The raw materials you need are often not available in the appropriate quality.	Negative	Financial manager
No member of the management team has gained experience in this industry so far.	Negative	Financial manager
It will take a long time until production will be cost effective.	Negative	Marketing manager
Product development will require high investment costs.	Negative	Operations manager
It can be assumed that there will soon be competitors in the market.	Negative	Operations manager
<i>Alternative 3</i>		
You have been in contact with a nearby university for a potential research collaboration.	Positive	All
The technologies for production are already well developed.	Positive	All
If this venture is successful it will be highly profitable.	Positive	All
So far, your search for investors has been unsuccessful.	Negative	Financial manager
It is difficult to find qualified employees for the tasks critical to effectively managing the venture.	Negative	Financial manager
The sales and distribution of the product make it necessary to extensively train the sales staff.	Negative	Marketing manager
The demand for your product will be rather limited.	Negative	Marketing manager
If you try to patent the idea, it is highly likely that there will be legal disputes.	Negative	Operations manager
<i>Alternative 4</i>		
You can benefit from a particular governmental support program.	Positive	All
An expert has agreed to work as an advisor for you.	Positive	All
Your business model is difficult to imitate by potential competitors.	Positive	All
You enter a field where there are only very few investors.	Negative	Financial manager
So far, no potential clients have been identified.	Negative	Marketing manager
Before you can realize this business idea, you have to conduct cost-intensive market studies.	Negative	Marketing manager
You cannot extend your offer to expand your business.	Negative	Operations manager
You must purchase expensive production machinery.	Negative	Operations manager

Note. We created two different order conditions (the best alternative could be Alternative 1 or Alternative 3) and randomly allocated teams to these conditions. In our study, we did not find any differences between teams in these conditions.

7.2.2 Rating scale information elaboration

Table 12. Rating scale information elaboration

Rating scale for information elaboration based on Resick et al. (2014)

Instructions: Based on the definition, explanations, and behavioral anchors, please select the most appropriate value for the team after watching the entire team discussion.

Rating	Behavior	Examples for coded behaviors
1	Team members exchanged very little, if any, information. Team members did not make suggestions, nor did they offer information from their areas of responsibility to their teammates when it was needed for a given decision.	[Two or more alternatives were not discussed at all. For other alternatives, only very few information items were exchanged, and no explanations offered.] E.g., “ <i>We have no customers certain</i> ” [no reaction by team members on this information].
2	Team members exchanged a little information and may have made a few sparse suggestions. Almost no explanation was presented for suggestions. Team members offered a little information from their areas of responsibility to their teammates when it was needed for a given decision.	[Few unique information items were mentioned. Often one alternative was not discussed at all. Typically no explanation or context was offered for the information items.] E.g., “ <i>We face missing management experience</i> ” [reaction by other team member “hmm”].
3	Team members exchanged some information and offered some suggestions but did not explain the rationale behind suggestions in much detail. Team members offered some information from their areas of responsibility to their teammates when it was needed for a given decision.	[At least one alternative was discussed in a rather superficial way without exchanging much information. For other alternatives, role-specific information was often missing. Information was often mentioned without further explanation of the rationale.] E.g., (1) “ <i>There will be competitors on the market soon; besides that, I see the same advantages as you.</i> ” (2) “ <i>The thing with the supply material—that’s a disadvantage.</i> ”
4	The team exchanged a good amount of information. Team members offered suggestions and information and generally explained the rationale behind their suggestions. Team members explained information from their areas of responsibility to their teammates when it was needed for a given decision.	[All alternatives were discussed. Most information items were exchanged. For many of the items, explanations were given. Often team members summarized their role-specific information in one line of arguments.] E.g., “ <i>If we want to have a patent later, there could be a lawsuit, which is connected to costs. The advantage [of that alternative] is that we are good with the technology from an R&D perspective and that we can enter the market soon and that in the case of success, the profit will be high. . . . I think this is a good alternative.</i> ”
5	The team exchanged a great deal of information. Team members offered many suggestions and much information and explained the rationale behind all of their suggestions. Team members offered and explained information from their areas of responsibility to their teammates when it was needed for a given decision.	[All/almost all information items were exchanged. Role-specific information items from other team members were integrated into team members’ own arguments. Various information items were combined. Many explanations for reasoning were given.] E.g., (1) “ <i>Strong competition, and we have a lack of experience. . . . These two together worry me. . . . We enter a market without experience but with strong competition.</i> ” (2) “ <i>We have potential on the international market.</i> ” “ <i>That’s positive. And the patent—if that is international as well—very positive</i> ”

Note. The coders were provided with the full information set as well as with the definition of information elaboration by van Knippenberg et al. (2004, p. 1011) as the “exchange of information and perspectives, individual-level processing of the information and perspectives, the process of feeding back the results of this individual-level processing into the group, and discussion and integration of its implications.” Moreover, we drew on prior research (Hoever et al., 2012; Homan et al., 2007; Resick et al., 2014) to give broad explanations regarding what characterizes facets of information elaboration—that is, when team members explain their unique information items in a detailed way, the team discusses the information shared by a member, and the team connects information items and discovers the implications for the team decision.

7.2.3 Coding scheme for team reflection and examples of coded statements

Table 13. Coding scheme for team reflection and examples of coded statements

Coding scheme for team reflection and examples of coded statements

Instructions: Based on the definition and explanations provided, please code all behaviors during the team interaction that represent team reflection. Please note which team member (managerial role) made the statement and when during the team discussion. Please count all statements coded for the team as the team's value for team reflection.

Team	Who?	When?	Statement
13	MM	00:01:01	<i>[After a team member suggested that everyone states their favorite alternative at the beginning of the discussion:] "I would like to tackle the task in a different way. I want to approach the decision rather unbiased and first would like to hear your information for each alternative."</i>
12	MM	00:08:08	<i>[All team members brought up their items:] "Should we now start comparing the positive and negative items step by step, so we could look at each alternative from different angles before we can come to an overall opinion?"</i>
35	FM	00:06:42	<i>[Correcting a team member who suggested dropping two alternatives] "Let's change perspective. . . . We could think about the important aspects of the other [to be dropped] alternatives and make sure that we don't forget anything."</i>
50	OM	00:14:28	<i>"We go around in circles. Each of us is using the same arguments [all the time]. . . . Let's try to be more systematic."</i>
18	OM	00:23:39	<i>"So, I have written down all items which we have mentioned: we have four negative and three positive aspects for [one alternative] and four negative and four positive aspects for [the other alternative]. . . . The question is whether that is enough as a basis for our decision."</i>
44	OM	00:12:54	<i>[The group is about to decide on one alternative.] "We should again look for potential downsides [of this alternative]. I worry that we agreed on [Alternative 1] so quickly that we might have overlooked negative aspects. . . . Shouldn't we explicitly look for its negative aspects?"</i>

Notes.

FM = Financial manager, MM = Marketing manager, OM = Operations manager

At the beginning of the manual, the coders were provided with a definition of team reflection by West et al. (1997, p. 296), defining it as "the extent to which group members overtly reflect upon, and communicate about, the group's objectives, strategies (e.g., decision-making) and processes (e.g., communication), and adapt them to current or anticipated circumstances." Based on prior research we gave rather abstract examples of team reflection that were described to occur "before, during, or after execution of the team task" (although activities after the team task are not in the scope of the study and were not videotaped) in the form of "joint consideration of team goals, strategies, and processes," including "the nature of the problem that faces the team," or when the team reviews if it "is still on track, whether the right problem is being solved, and whether things are done correctly" (Schippers et al., 2007, p. 191).

7.3 Appendix Essay III: From Dating to Happily Ever After... or Divorce: A Future Research Agenda on Entrepreneurial Teams Taking a Lifecycle Perspective

7.3.1 List of articles for literature review

Table 14. List of articles for literature review

Author	Title	Year	Journal	Lifecycle Stage (Main Focus)	Reference
Agarwal, R., Campbell, B. A., Franco, A. M., and Ganco, M.	What do I take with me? The mediating effect of spin-out team size and tenure on the founder-firm performance relationship	2016	Academy of Management Journal	Formation	Agarwal, R., Campbell, B. A., Franco, A. M., & Ganco, M. (2016). What do I take with me? The mediating effect of spin-out team size and tenure on the founder-firm performance relationship. <i>Academy of Management Journal</i> , 59(3), 1060–1087.
Almandoz, J.	Founding teams as carriers of competing logics: When institutional forces predict banks' risk exposure	2014	Administrative Science Quarterly	Formation	Almandoz, J. (2014). Founding teams as carriers of competing logics: When institutional forces predict banks' risk exposure. <i>Administrative Science Quarterly</i> , 59(3), 442–473.
Aven, B., and Hillmann, H.	Structural role complementarity in entrepreneurial teams	2017	Management Science	Formation	Aven, B., & Hillmann, H. (2017). Structural role complementarity in entrepreneurial teams. <i>Management Science</i> .
Beckman, C. M., and Burton, M. D.	Founding the future: Path dependence in the evolution of top management teams from founding to IPO	2008	Organization Science	Formation	Beckman, C.M., & Burton, M.D. 2008. Founding the future: Path dependence in the evolution of top management teams from founding to IPO. <i>Organization Science</i> , 19, 3-24.
Beckman, C. M., Bird Schoonhoven, C., Rottner, R. M., and Sang-Joon Kim.	Relational pluralism in de novo organizations: Boards of directors as bridges or barriers to diverse alliance portfolios?	2014	Academy of Management Journal	Formation	Beckman, C. M., Bird Schoonhoven, C., Rottner, R. M., & Sang-Joon Kim. (2014). Relational Pluralism in Relational pluralism in de novo organizations: Boards of directors as bridges or barriers to diverse alliance portfolios? <i>Academy of Management Journal</i> , 57(2), 460–483.
Ben-Hafaïedh, C., Micozzi, A., and Pattitoni, P.	Academic spin-offs' entrepreneurial teams and performance: a sub-groups approach	2018	The Journal of Technology Transfer	Formation	Ben-Hafaïedh, C., Micozzi, A., & Pattitoni, P. (2018). Academic spin-offs' entrepreneurial teams and performance: a sub-groups approach. <i>The</i>

					Journal of Technology Transfer, 43(3), 714-733.
Blatt, R.	Tough love: how communal schemas and contracting practices build relational capital in entrepreneurial teams	2009	Academy of Management Journal Review	Formation	Blatt, R. (2009). Tough love: how communal schemas and contracting practices build relational capital in entrepreneurial teams. <i>Academy of Management Journal Review</i> , 34, 533–551.
Brannon, D. L., Wiklund, J., and Haynie, J. M.	The varying effects of family relationships in entrepreneurial teams	2013	Entrepreneurship: Theory and Practice	Formation	Brannon, D. L., Wiklund, J., & Haynie, J. M. (2013). The varying effects of family relationships in entrepreneurial teams. <i>Entrepreneurship: Theory and Practice</i> , 37(1), 107–132.
Breugst, N., Patzelt, H., and Rathgeber, P.	How should we divide the pie? Equity distribution and its impact on entrepreneurial teams	2014	Journal of Business Venturing	Formation	Breugst, N., Patzelt, H., Rathgeber, P. (2014). How should we divide the pie? Equity distribution and its impact on entrepreneurial teams. <i>Journal of Business Venturing</i> , 30(1), 66-94.
Brinckmann, J., and Hoegl, M.	Effects of initial teamwork capability and initial relational capability on the development of new technology-based firms	2011	Strategic Entrepreneurship Journal	Formation	Brinckmann, J., & Hoegl, M. 2011. Effects of initial teamwork capability and initial relational capability on the development of new technology-based firms. <i>Strategic Entrepreneurship Journal</i> , 5, 37-57.
Brinckmann, J., Salomo, S., and Gemuenden, H.G.	Financial management competence of founding teams and growth of new technology-based firms	2011	Entrepreneurship Theory and Practice	Formation	Brinckmann, J., Salomo, S., & Gemuenden, H.G. 2011. Financial management competence of founding teams and growth of new technology-based firms. <i>Entrepreneurship Theory and Practice</i> , 35, 217-243.
Bruneel, J., Yli-Renko, H., and Clarysse, B.	Learning from experience and learning from others: How congenital and interorganizational learning substitute for experiential learning in young firm internationalization	2010	Strategic Entrepreneurship Journal	Collaboration	Bruneel, J., Yli-Renko, H., & Clarysse, B. 2010. Learning from experience and learning from others: How congenital and interorganizational learning substitute for experiential learning in young firm internationalization. <i>Strategic Entrepreneurship Journal</i> , 4, 164-182.
Bruneel, J., Clarysse, B., and Autio, E.	The role of prior domestic experience and prior shared experience	2018	International Small Business Journal	Formation	Bruneel, J., Clarysse, B., & Autio, E. (2018). The role of prior domestic experience and prior shared experience

	in young firm internationalization				in young firm internationalization. <i>International Small Business Journal</i> , 36(3), 265-284.
Busenitz, L. W., Plummer, L. A., Klotz, A. C., Shahzad, A., and Rhoads, K.	Entrepreneurship research (1985–2009) and the emergence of opportunities	2014	Entrepreneurship Theory and Practice	n.a.	Busenitz, L. W., Plummer, L. A., Klotz, A. C., Shahzad, A., & Rhoads, K. (2014). Entrepreneurship re-search (1985–2009) and the emergence of opportunities. <i>Entrepreneurship: Theory and Practice</i> , 38(5), 981–1000.
Cardon, M. S., Post, C., and Forster, W. R.	Team entrepreneurial passion: Its emergence and influence in new venture teams	2017	Academy of Management Journal Review	Collaboration	Cardon, M. S., Post, C., & Forster, W. R. (2017). Team entrepreneurial passion: Its emergence and influence in new venture teams. <i>Academy of Management Journal Review</i> , 42(2), 283–305.
Chaganti, R.S., Watts, A.D., Chaganti, R., and Zimmerman-Treichel, M.	Ethnic-immigrants in founding teams: Effects on prospector strategy and performance in new internet ventures	2008	Journal of Business Venturing	Formation	Chaganti, R.S., Watts, A.D., Chaganti, R., & Zimmerman-Treichel, M. 2008. Ethnic-immigrants in founding teams: Effects on prospector strategy and performance in new internet ventures. <i>Journal of Business Venturing</i> , 23, 113-139.
Chandler, G. N., and Lyon, D. W.	Involvement in knowledge-acquisition activities by venture team members and venture performance	2009	Entrepreneurship Theory and Practice	Collaboration	Chandler, G. N., & Lyon, D. W. (2009). Involvement in knowledge-acquisition activities by venture team members and venture performance. <i>Entrepreneurship Theory and Practice</i> , 33(3), 571-592.
Coad, A., and Timmermans, B.	Two's company: Composition, structure and performance of entrepreneurial pairs	2014	European Management Review	Formation	Coad, A., & Timmermans, B. (2014). Two's company: Composition, structure and performance of entrepreneurial pairs. <i>European Management Review</i> , 11(2), 117–138.
Dai, Y., Roundy, P. T., Chok, J. I., Ding, F., and Byun, G.	‘Who knows what?’ in new venture teams: Transactive memory systems as a micro-foundation of entrepreneurial orientation	2016	Journal of Management Studies	Collaboration	Dai, Y., Roundy, P. T., Chok, J. I., Ding, F., & Byun, G. (2016). ‘Who knows what?’ in new venture teams: Transactive memory systems as a micro-foundation of entrepreneurial orientation. <i>Journal of Management Studies</i> , 53(8), 1320-1347.

Dai, Y., Byun, G., and Ding, F.	The direct and indirect impact of gender diversity in new venture teams on innovation performance	2018	Entrepreneurship Theory and Practice	Formation	Dai, Y., Byun, G., & Ding, F. (2018). The direct and indirect impact of gender diversity in new venture teams on innovation performance. <i>Entrepreneurship Theory and Practice</i> , 1042258718807696.
De Mol, E., Khapova, S. N., and Elfring, T.	Entrepreneurial team cognition: A review	2015	International Journal of Management Reviews	n.a. (Review)	De Mol, E., Khapova, S. N., & Elfring, T. (2015). Entrepreneurial team cognition: A review. <i>International Journal of Management Reviews</i> , 17(2), 232–255.
Discua Cruz, A., Howorth, C. And Hamilton, E.	Intrafamily entrepreneurship: the formation and membership of family entrepreneurial teams	2013	Entrepreneurship Theory and Practice	Formation	Discua Cruz, A., Howorth, C. and Hamilton, E. (2013). Intrafamily entrepreneurship: the formation and membership of family entrepreneurial teams. <i>Entrepreneurship Theory and Practice</i> , 37, 17–46.
Eesley, C. E., Hsu, D. H., and Roberts, E. B.	The contingent effects of top management teams on venture performance: Aligning founding team composition with innovation strategy and commercialization environment	2014	Strategic Management Journal	Formation	Eesley, C. E., Hsu, D. H., & Roberts, E. B. (2014). The contingent effects of top management teams on venture performance: Aligning founding team composition with innovation strategy and commercialization environment. <i>Strategic Management Journal</i> , 35(12), 1798–1817.
Eisenhardt, K. M.	Top management teams and the performance of entrepreneurial firms	2013	Small Business Economics	Formation	Eisenhardt, K.M. (2013). Top management teams and the performance of entrepreneurial firms. <i>Small Business Economics</i> , 40, 805–816.
Ferguson, A. J., Cohen, L. E., Burton, M. D., and Beckman, C. M.	Misfit and milestones: Structural elaboration and capability reinforcement in the evolution of entrepreneurial top management teams	2016	Academy of Management Journal	Dissolution	Ferguson, A. J., Cohen, L. E., Burton, M. D., & Beckman, C. M. (2016). Misfit and milestones: Structural elaboration and capability reinforcement in the evolution of entrepreneurial top management teams. <i>Academy of Management Journal</i> , 59(4), 1430–1450.
Fern, M.J., Cardinal, L.B., and O'Neill, H.M.	The genesis of strategy in new ventures: Escaping the constraints of founder and team knowledge	2012	Strategic Management Journal	Formation	Fern, M.J., Cardinal, L.B., & O'Neill, H.M. (2012). The genesis of strategy in new ventures: Escaping the constraints of founder and team knowledge.

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Foo, M.-D.	Member experience, use of external assistance and evaluation of business ideas	2010	Journal of Small Business Management	Formation	Foo, M.-D. (2010). Member experience, use of external assistance and evaluation of business ideas. Journal of Small Business Management, 48(1), 32-43
Foss, N.J., Klein, P.G., Kor, Y.Y. And Mahoney, J.T.	Entrepreneurship, subjectivism, and the resource-based view: toward a new synthesis	2008	Strategic Entrepreneurship Journal	Collaboration	Foss, N.J., Klein, P.G., Kor, Y.Y. and Mahoney, J.T. (2008). Entrepreneurship, subjectivism, and the resource-based view: toward a new synthesis. Strategic Entrepreneurship Journal, 2, 73-94.
Franke, N., Gruber, M., Harhoff, D., and Henkel, J.	Venture capitalists' evaluations of startup teams: Trade-offs, knock-out criteria, and the impact of VC experience	2008	Entrepreneurship Theory and Practice	Collaboration	Franke, N., Gruber, M., Harhoff, D., & Henkel, J. 2008. Venture capitalists' evaluations of startup teams: Trade-offs, knock-out criteria, and the impact of VC experience. Entrepreneurship Theory and Practice, 32: 459-483.
Furr, N. R., Cavarretta, F. And Garg, S.	Who changes course? The role of domain knowledge and novel framing in making technology changes	2012	Strategic Entrepreneurship Journal	Collaboration	Furr, N.R., Cavarretta, F. and Garg, S. (2012). Who changes course? The role of domain knowledge and novel framing in making technology changes. Strategic Entrepreneurship Journal, 6, 236-256.
Grossman, E. B., Yli-Renko, H. And Janakiraman, R.	Resource search, interpersonal similarity, and network tie valuation in nascent entrepreneurs' emerging networks	2012	Journal of Management	Formation	Grossman, E.B., Yli-Renko, H. and Janakiraman, R. (2012). Resource search, interpersonal similarity, and network tie valuation in nascent entrepreneurs' emerging networks. Journal of Management, 38, pp. 1760-1787.
Gruber, M., Macmillan, I. C. And Thompson, J.D.	From minds to markets: how human capital endowments shape market opportunity identification of technology start-ups	2012	Journal of Management	Formation	Gruber, M., Macmillan, I.C. and Thompson, J.D. (2012). From minds to markets: how human capital endowments shape market opportunity identification of technology start-ups. Journal of Management, 38, pp. 1421- 1449.
Gruber, M., Macmillan, I. C., and Thompson, J. D.	Escaping the prior knowledge corridor: What shapes the number and variety of market opportunities identified before market entry of technology start-ups?	2013	Organization Science	Formation	Gruber, M., MacMillan, I. C., & Thompson, J. D. (2013). Escaping the prior knowledge corridor: What shapes the number and variety of market opportunities identified before market entry of technology start-ups? Organization

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Guenther, C., Oertel, S., and Walgenbach, P.	It's all about timing: Age-dependent consequences of founder exits and new member additions	2016	Entrepreneurship Theory and Practice	Dissolution	Guenther, C., Oertel, S., & Walgenbach, P. (2016). It's all about timing: Age-dependent consequences of founder exits and new member additions. <i>Entrepreneurship: Theory and Practice</i> , 40(4), 843–865.
Harper, D. A.	Towards a theory of entrepreneurial teams	2008	Journal of Business Venturing	n.a.	Harper, D.A. (2008). Towards a theory of entrepreneurial teams. <i>Journal of Business Venturing</i> , 23, 613–626.
Häsel, M., Kollmann, T., and Breugst, N.	IT competence in internet founder teams	2010	Business & Information Systems Engineering	Formation	Häsel, M., Kollmann, T., & Breugst, N. (2010). IT competence in internet founder teams. <i>Business & Information Systems Engineering</i> , 2(4), 209–217.
Hellmann, T., and Wasserman, N.	The first deal: The division of founder equity in new ventures	2017	Management Science	Formation	Hellmann, T., & Wasserman, N. (2017). The first deal: The division of founder equity in new ventures. <i>Management Science</i> , 63(8), 2647–2666.
Hellmann, T., and Thiele, V.	Contracting among founders	2015	The Journal of Law, Economics, and Organization	Formation	Hellmann, T., & Thiele, V. (2015). Contracting among founders. <i>The Journal of Law, Economics, and Organization</i> , 31(3), 629–661.
Hoogendoorn, S., Oosterbeek, H., and Van Praag, M.	The impact of gender diversity on the performance of business teams: Evidence from a field experiment	2013	Management Science	Formation	Hoogendoorn, S., Oosterbeek, H., & van Praag, M. (2013). The impact of gender diversity on the performance of business teams: Evidence from a field experiment. <i>Management Science</i> , 59(7), 1514–1528
Hoogendoorn, S., Parker, S. C., and Van Praag, M.	Smart or diverse start-up teams? Evidence from a field experiment	2017	Organization Science	Formation	Hoogendoorn, S., Parker, S. C., & Van Praag, M. (2017). Smart or diverse start-up teams? Evidence from a field experiment. <i>Organization Science</i> , 28(6), 1010–1028
Iacobucci, D., and Rosa, P.	The growth of business groups by habitual entrepreneurs: The role of entrepreneurial teams	2010	Entrepreneurship Theory and Practice	Dissolution	Iacobucci, D., & Rosa, P. 2010. The growth of business groups by habitual entrepreneurs: The role of entrepreneurial teams. <i>Entrepreneurship Theory and Practice</i> , 34, 351–377.

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Johnson, A. R., Van De Schoot, R., Delmar, F., and Crano, W. D.	Social influence interpretation of interpersonal processes and team performance over time using Bayesian model selection	2015	Journal of Management	Collaboration	Johnson, A. R., van de Schoot, R., Delmar, F., & Crano, W. D. (2015). Social influence interpretation of interpersonal processes and team performance over time using Bayesian model selection. <i>Journal of Management</i> , 41(2), 574–606.
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Karatas-Özkan, M.	Understanding relational qualities of entrepreneurial learning: towards a multi-layered approach	2011	Entrepreneurship and Regional Development	Collaboration	Karatas-Özkan, M. (2011). Understanding relational qualities of entrepreneurial learning: towards a multi-layered approach. <i>Entrepreneurship and Regional Development</i> , 23, 877–906.
Klotz, A. C., Hmieleski, K. M., Bradley, B. H., and Busenitz, L. W.	New venture teams: A review of the literature and roadmap for future research	2014	Journal of Management	n.a.	Klotz, A. C., Hmieleski, K. M., Bradley, B. H., & Busenitz, L. W. (2014). New venture teams: A review of the literature and roadmap for future research. <i>Journal of Management</i> , 40(1), 226-255.
Knapp, M. T., Breitenacker, R. J., and Khan, M. S.	Achievement motivation diversity and entrepreneurial team performance: the mediating role of cohesion	2015	European Journal of International Management	Formation	Knapp, M. T., Breitenacker, R. J., & Khan, M. S. (2015). Achievement motivation diversity and entrepreneurial team performance: The mediating role of cohesion. <i>European Journal of International Management</i> , 9(5), 593-613.
Knipfer, K., Schreiner, E., Schmid, E., and Peus, C.	The performance of pre-founding entrepreneurial teams: The importance of learning and leadership	2018	Applied Psychology	Formation	Knipfer, K., Schreiner, E., Schmid, E., & Peus, C. (2018). The performance of pre-founding entrepreneurial teams: The importance of learning and leadership.

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Knockaert, M., Ucbasaran, D., Wright, M., and Clarysse, B.	The relationship between knowledge transfer, top management team composition, and performance: The case of science-based entrepreneurial firms	2011	Entrepreneurship Theory and Practice	Collaboration	Knockaert, M., Ucbasaran, D., Wright, M., & Clarysse, B. 2011. The relationship between knowledge transfer, top management team composition, and performance: The case of science-based entrepreneurial firms. <i>Entrepreneurship Theory and Practice</i> , 35, 777-803.
Kollmann, T., Stöckmann, C., Meves, Y., and Kensbock, J.	When members of entrepreneurial teams differ: linking diversity in individual-level entrepreneurial orientation to team performance	2017	Small Business Economics	Formation	Kollmann, T., Stöckmann, C., Meves, Y., & Kensbock, J. (2017). When members of entrepreneurial teams differ: linking diversity in individual-level entrepreneurial orientation to team performance. <i>Small Business Economics</i> , 48(4), 843–859.
Kollmann, T., Stöckmann, C., and Linstaedt, J. W.	Task conflict, narcissism and entrepreneurial capability in teams planning a business: A moderated moderation approach to explaining business planning performance	2018	Journal of Small Business Management	Collaboration	Kollmann, T., Stöckmann, C., & Linstaedt, J. W. (2018). Task conflict, narcissism and entrepreneurial capability in teams planning a business: A moderated moderation approach to explaining business planning performance. <i>Journal of Small Business Management</i> .
Kollmann, T., Häsel, M., and Breugst, N.	Competence of IT professionals in e-business venture teams: The relationship of experience, expertise and preference structure	2009	Journal of Management Information Systems	Formation	Kollmann, T., Häsel, M., & Breugst, N. (2009). Competence of IT professionals in e-business venture teams: the effect of experience and expertise on preference structure. <i>Journal of management information systems</i> , 25(4), 51-80.
Kontinen, T. And Ojala, A.	Network ties in the international opportunity recognition of family SMEs	2011	International Business Review	Formation	Kontinen, T. and Ojala, A. (2011). Network ties in the international opportunity recognition of family SMEs. <i>International Business Review</i> , 20, 440–453.
Leung, A., Foo, M. D., and Chaturvedi, S.	Imprinting effects of founding core teams on HR values in new ventures	2013	Entrepreneurship: Theory and Practice	Formation	Leung, A., Foo, M. D., & Chaturvedi, S. (2013). Imprinting effects of founding core teams on HR values in new ventures. <i>Entrepreneurship: Theory and Practice</i> , 37(1), 87–106

Lim, J. Y., Buse-nitz, L. W., and Chidambaram, L.	New venture teams and the quality of business opportunities identified: Faultlines between sub-groups of founders and investors	2013	Entrepreneurship: Theory and Prac-tice	Collaboration	Lim, J. Y., Busenitz, L. W., & Chidambaram, L. (2013). New venture teams and the quality of business opportunities identi-fied: Faultlines be-tween subgroups of founders and investors. <i>Entrepreneurship: The-ory and Practice</i> , 37(1), 47-67
Nikiforou, A., Za-bara, T., Clarysse, B., and Gruber, M.	The role of teams in ac-ademic spin-offs	2018	Academy of Management Journal Perspec-tives	n.a.	Nikiforou, A. (Iro), Za-bara, T., Clarysse, B., & Gruber, M. (2018). The role of teams in aca-demic spin-offs. <i>Acad-emy of Management Journal Perspectives</i> , 32(1), 78-103.
Nuscheler, D., Engelen, A., and Zahra, S. A.	The role of top manage-ment teams in trans-forming technology-based new ventures' product introductions into growth	2018	Journal of Busi-ness Venturing	Formation	Nuscheler, D., Engelen, A., & Zahra, S. A. (2018). The role of top management teams in transforming technol-ogy-based new ven-tures' product introduc-tions into growth. <i>Journal of Business Ventur-ing</i> .
Organ, D., and O'flaherty, B.	Intuitive decision-mak-ing and deep level di-versity in entrepreneurial ICT teams	2016	Journal of Deci-sion Systems	Collaboration	Organ, D., & O'Fla-herty, B. (2016). Intui-tive decision-making and deep level diversity in entrepreneurial ICT teams. <i>Journal of Deci-sion Systems</i> , 25, 421-435.
Parker, S.C.	Can cognitive biases explain venture team homophily?	2009	Strategic Entre-preurship Jour-nal	Formation	Parker, S.C. (2009). Can cognitive biases explain venture team homophily? <i>Strategic Entrepreneurship Jour-nal</i> , 3, 67-83.
Patzelt, H.	CEO human capital, top management teams, and the acquisition of ven-ture capital in new tech-nology ventures: An empirical analysis	2010	Journal of Engi-neering and Technology Management	Formation	Patzelt, H. (2010). CEO human capital, top management teams, and the acquisition of venture capital in new technol-ogy ventures: An em-pirical analysis. <i>Journal of Engineering and Technology Manage-ment</i> , 27(3-4), 131-147.
Patzelt, H., Zu Knyphausen-Aufseß, D., and Nikol, P.	Top management teams, business models, and performance of bio-technology ventures: An upper echelon per-spective	2008	British Journal of Management	Formation	Patzelt, H., Zu Kny-phausen-Aufseß, D., & Nikol, P. (2008). Top management teams, business mod-els, and performance of biotech-nology ven-tures: An upper echelon perspec-tive. <i>British Journal of Management</i> , 19(3), 205-221.

Perry-Smith, J.E., and Coff, R.W.	In the mood for entrepreneurial creativity? How optimal group affect differs for generating and selecting ideas for new ventures	2011	Strategic Entrepreneurship Journal	Collaboration	Perry-Smith, J.E., & Coff, R.W. 2011. In the mood for entrepreneurial creativity? How optimal group affect differs for generating and selecting ideas for new ventures. <i>Strategic Entrepreneurship Journal</i> , 5: 247-268.
Powell, E. E., and Baker, T.	In the beginning: Identity processes and organizing in multi-founder nascent ventures	2017	Academy of Management Journal	Collaboration	Powell, E. E., & Baker, T. (2017). In the beginning: Identity processes and organizing in multi-founder nascent ventures. <i>Academy of Management Journal</i> , 60(6), 2381–2414.
Rauter, S., Weiss, M., and Hoegl, M.	Team learning from setbacks: A study in the context of start-up teams	2018	Journal of Organizational Behavior	Collaboration	Rauter, S., Weiss, M., & Hoegl, M. (2018). Team learning from setbacks: A study in the context of start-up teams. <i>Journal of Organizational Behavior</i> , 39(6), 783–795.
Sardana, D., and Scott-Kemmis, D.	Who learns what? A study based on entrepreneurs from biotechnology new ventures	2010	Journal of Small Business Management	Collaboration	Sardana, D., & Scott-Kemmis, D. 2010. Who learns what? A study based on entrepreneurs from biotechnology new ventures. <i>Journal of Small Business Management</i> , 48, 441-468.
Schjoedt, L., Monsen, E., Pearson, A., Barnett, T., and Chrisman, J. J.	New venture and family business teams: Understanding team formation, composition, behaviors, and performance	2013	Entrepreneurship: Theory and Practice	Formation	Schjoedt, L., Monsen, E., Pearson, A., Barnett, T., & Chrisman, J. J. (2013). New venture and family business teams: Understanding team formation, composition, behaviors, and performance. <i>Entrepreneurship: Theory and Practice</i> , 37(1), 1–15.
Shalley, C.E. And Perry-Smith, J.E.	The emergence of team creative cognition: the role of diverse outside ties, sociocognitive network centrality, and team evolution	2008	Strategic Entrepreneurship Journal	Collaboration	Shalley, C.E. and Perry-Smith, J.E. (2008). The emergence of team creative cognition: the role of diverse outside ties, sociocognitive network centrality, and team evolution. <i>Strategic Entrepreneurship Journal</i> , 2, 23–41.
Souitaris, V., and Maestro, B.M.M.	Polychronicity in top management teams: The impact on strategic decision processes and performance of new technology ventures	2010	Strategic Management Journal	Collaboration	Souitaris, V., & Maestro, B.M.M. 2010. Polychronicity in top management teams: The impact on strategic decision processes and performance of new technology ventures. <i>Strategic Management Journal</i> , 31, 652-678.

Stam, W., and Elfring, T.	Entrepreneurial orientation and new venture performance: The moderating role of intra- and extraindustry social capital	2008	Academy of Management Journal	Formation	Stam, W., & Elfring, T. 2008. Entrepreneurial orientation and new venture performance: The moderating role of intra- and extraindustry social capital. <i>Academy of Management Journal</i> , 51, 97-111.
Steffens, P., Terjesen, S., and Davidsson, P.	Birds of a feather get lost together: new venture team composition and performance	2012	Small Business Economics	Formation	Steffens, P., Terjesen, S., & Davidsson, P. (2012). Birds of a feather get lost together: New venture team composition and performance. <i>Small Business Economics</i> , 39(3), 727–743.
Tzabbar, D., and Margolis, J.	Beyond the startup stage: The founding team's human capital, new venture's stage of life, founder--CEO duality, and breakthrough innovation	2017	Organization Science	Formation	Tzabbar, D., & Margolis, J. (2017). Beyond the startup stage: The founding team's human capital, new venture's stage of life, founder--CEO duality, and break-through innovation. <i>Organization Science</i> , 28(5), 857–872
Vandenbroucke, E., Knockaert, M., and Ucbasaran, D.	Outside Board Human Capital and Early Stage High-Tech Firm Performance	2016	Entrepreneurship: Theory and Practice	Formation	Vandenbroucke, E., Knockaert, M., & Ucbasaran, D. (2016). Outside Board Human Capital and Early Stage High-Tech Firm Performance. <i>Entrepreneurship: Theory and Practice</i> , 40(4), 759–779
Vissa, B., and Chacar, A.S.	Leveraging ties: The contingent value of entrepreneurial teams' external advice networks on Indian software venture performance	2009	Strategic Management Journal	Formation	Vissa, B., & Chacar, A.S. 2009. Leveraging ties: The contingent value of entrepreneurial teams' external advice networks on Indian software venture performance. <i>Strategic Management Journal</i> , 30: 1179-1191.
Zarutskie, R.	The role of top management team human capital in venture capital markets: Evidence from first-time funds	2010	Journal of Business Venturing	Formation	Zarutskie, R. (2010). The role of top management team human capital in venture capital markets: Evidence from first-time funds. <i>Journal of Business Venturing</i> , 25(1), 155–172.
Zhao, Y. L., Song, M., and Storm, G. L.	Founding team capabilities and new venture performance: The mediating role of strategic positional advantages	2013	Entrepreneurship: Theory and Practice	Formation	Zhao, Y. L., Song, M., & Storm, G. L. (2013). Founding team capabilities and new venture performance: The mediating role of strategic positional advantages. <i>Entrepreneurship: Theory and Practice</i> , 37(4), 789–814.

Zheng, Y.	Unlocking founding team prior shared experience: a transactive memory system perspective	2012	Journal of Business Venturing	Collaboration	Zheng, Y. (2012). Unlocking founding team prior shared experience: a transactive memory system perspective. <i>Journal of Business Venturing</i> , 27, 577–591.
Zheng, Y. And Mai, Y.	A contextualized transactive memory system view on how founding teams respond to surprises: evidence from China	2013	Strategic Entrepreneurship Journal	Collaboration	Zheng, Y. and Mai, Y. (2013). A contextualized transactive memory system view on how founding teams respond to surprises: evidence from China. <i>Strategic Entrepreneurship Journal</i> , 7, 197–213.
Zheng, Y., Devaughn, M. L., and Zellmer-Bruhn, M.	Shared and shared alike? Founders' prior shared experience and performance of newly founded banks	2016	Strategic Management Journal	Formation	Zheng, Y., Devaughn, M. L., & Zellmer-Bruhn, M. (2016). Shared and shared alike? Founders' prior shared experience and performance of newly founded banks. <i>Strategic Management Journal</i> , 37(12), 2503-2520.
Zhou, W.	When does shared leadership matter in entrepreneurial teams: the role of personality composition	2016	International Entrepreneurship and Management Journal	Collaboration	Zhou, W. (2016). When does shared leadership matter in entrepreneurial teams: the role of personality composition. <i>International Entrepreneurship and Management Journal</i> , 12(1), 153-169.
Zolin, R., Kuckertz, A. And Kautonen, T.	Human resource flexibility and strong ties in entrepreneurial teams	2011	Journal of Business Research	Formation	Zolin, R., Kuckertz, A. and Kautonen, T. (2011). Human resource flexibility and strong ties in entrepreneurial teams. <i>Journal of Business Research</i> , 64, 1097–1103.

8 Sworn statement

Anhang I

Eidesstattliche Erklärung

Ich erkläre an Eides statt, dass ich die bei der promotionsführenden Einrichtung
Technische Universität München: Fakultät für Wirtschaftswissenschaften

der TUM zur Promotionsprüfung vorgelegte Arbeit mit dem Titel:
The Entrepreneurial Team Journey: Collectively Exploring the Venture's Future

in Chair of Entrepreneurship

Fakultät, Institut, Lehrstuhl, Klinik, Krankenhaus, Abteilung

unter der Anleitung und Betreuung durch: Prof. Dr. Dr. Patzelt ohne sonstige Hilfe erstellt und bei der Abfassung nur die gemäß § 6 Ab. 6 und 7 Satz 2 angebotenen Hilfsmittel benutzt habe.

Ich habe keine Organisation eingeschaltet, die gegen Entgelt Betreuerinnen und Betreuer für die Anfertigung von Dissertationen sucht, oder die mir obliegenden Pflichten hinsichtlich der Prüfungsleistungen für mich ganz oder teilweise erledigt.

Ich habe die Dissertation in dieser oder ähnlicher Form in keinem anderen Prüfungsverfahren als Prüfungsleistung vorgelegt.

Die vollständige Dissertation wurde in _____ veröffentlicht. Die promotionsführende Einrichtung

_____ hat der Veröffentlichung zugestimmt.

Ich habe den angestrebten Doktorgrad noch nicht erworben und bin nicht in einem früheren Promotionsverfahren für den angestrebten Doktorgrad endgültig gescheitert.

Ich habe bereits am _____ bei der Fakultät für _____
_____ der Hochschule _____
unter Vorlage einer Dissertation mit dem Thema _____
_____ die Zulassung zur Promotion beantragt mit dem Ergebnis: _____

Die öffentlich zugängliche Promotionsordnung der TUM ist mir bekannt, insbesondere habe ich die Bedeutung von § 28 (Nichtigkeit der Promotion) und § 29 (Entzug des Doktorgrades) zur Kenntnis genommen. Ich bin mir der Konsequenzen einer falschen Eidesstattlichen Erklärung bewusst.

Mit der Aufnahme meiner personenbezogenen Daten in die Alumni-Datei bei der TUM bin ich

einverstanden, nicht einverstanden.

München, 30.12.2018, Unterschrift

