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Switching off or always on: A theoretical and empirical investigation of entrepreneurs' psychological detachment from work

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List of abbreviations and acronyms

a.m.	Ante meridiem
AIC	Akaike Information Criterion
BCERC	Babson College Entrepreneurship Research Conference
BEST	Building Entrepreneurial Success Teams
df	Degrees of freedom
Dr.	Doctor
EBSCO	Elton B. Stephens Company
e.g.	Exempli gratia (for example)
et al.	Et alii (and others)
HLM	Hierarchical linear modeling
i.e.	Id est (that is)
ICC	Intraclass correlation coefficient
LQ	Long questionnaire
M	Mean
Max	Maximum
Min	Minimum
n/a	Not available
p.m.	Post meridiem
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
Prof.	Professor
SD	Standard deviation
SE	Standard error
vs.	Versus
VIF	Variance inflation factor

Abstract

Entrepreneurs are highly dedicated to their work. They even have a reputation for not switching off from their work at all. The literature on organizational behavior has defined mentally switching off from work as psychological detachment. This dissertation sets out to synthesize knowledge on psychological detachment and to understand how entrepreneurial setbacks affect psychological detachment. In conducting a systematic literature review, I identify antecedents, which particularly highlight the role of work stressors as impeding psychological detachment, and outcomes, which emphasize the importance of psychological detachment for well-being. The literature review further identifies gaps in the literature, which give rise to opportunities for both organizational behavior and entrepreneurship literature. The dissertation also includes an empirical study on entrepreneurs' psychological detachment relying on a longitudinal design. In order to understand to what extent and under what circumstances entrepreneurial setbacks affect entrepreneurs' subsequent psychological detachment, I conduct a week-level longitudinal study among 257 entrepreneurs. Hierarchical linear modelling reveals, that, consistent with the stressor-detachment model, internal setbacks (i.e., setbacks with respect to internal stakeholders) act as work stressors that impede subsequent psychological detachment; however, unexpectedly, external setbacks (i.e., setbacks with respect to external stakeholders) did not influence subsequent detachment. Consistent with our theorizing based on attribution theory, entrepreneurial effort acts as a moderator, with differential effects between internal versus external setbacks. Accordingly, this dissertation contributes to an understanding of entrepreneurs' psychological detachment from work as well as the psychological consequences of entrepreneurial setbacks.

Keywords: psychological detachment, entrepreneurial well-being, entrepreneurial setbacks, stressor-detachment model, attribution theory, entrepreneurial effort, entrepreneurial non-work time

1 Introduction

1.1 Conceptual background

Entrepreneurs have a reputation for cultivating a heroic image of their occupation that is characterized by hard work and an "always-on" mentality. This image has been coined hustle culture and celebrated in the media as a lifestyle where "one never exits a kind of work rapture, in which the chief purpose of exercising or attending a concert is to get inspiration that leads back to the desk" (Griffith, 2019, para. 4). Elon Musk, for example, is known for sometimes sleeping at the factory and not taking time off for two decades (Gelles et al., 2018). Similarly, hidden behind the code "996", successful Chinese entrepreneurs like Jack Ma support a working hours system in which employees work six days a week from 9 a.m. to 9 p.m. (Qiqing & Zhong, 2019). Beyond the perhaps "longest working hours of any occupation" (Williamson et al., 2021, p. 1308), entrepreneurs seem to have difficulties in switching off from their work even during the time they are not formally working, which Mark Zuckerberg expresses as follows: "If you count the time I'm in the office, it's probably no more than 50-60 hours a week. But if you count all the time I'm focused on our mission, that's basically my whole life" (Goldman, 2015, para. 3).

In examining this "always-on" mentality, the scholarly field of entrepreneurship emphasizes entrepreneurs' high commitment to their work and venture. Specifically, the literature agrees that entrepreneurs tend to strongly identify with their entrepreneurial career (Williamson et al., 2021) and their ventures (Hoang & Gimeno, 2010; Murnieks & Mosakowski, 2007; Stephan, 2018), which is why they are even likely to see their ventures as their babies (Cardon et al., 2005). Moreover, entrepreneurs tend to build their personal identities strongly on work and their role in the venture (Cardon et al., 2009) and they often experience their work as meaningful (Stephan et al., 2020; Shir & Ryff, in press). Although entrepreneurs typically enjoy high levels of autonomy in decision-making and freedom in how they organize their day (Mueller et al., 2012; Shir et al., 2019; Shir & Ryff, in press; Stephan et al., in press), they usually have particularly weak boundaries between work and non-work areas in their lives compared to employees, such

that their working times prolong through evenings, weekends, and vacations (Williamson et al., 2021). Because of their high levels of engagement paired with the responsibility for their venture and its employees (Cardon & Patel, 2015), entrepreneurs have a reputation for not switching off from work (Weinberger et al., 2018; Williamson et al., 2021).

The extent to which individuals are able to mentally switch off from work during non-work time has been in the focus of research on organizational behavior since scholars have coined the term psychological detachment in 1998 (Etzion et al.). Research on employees emphasizes the importance of psychological detachment for individuals' recovery (Ragsdale et al., 2011; van Hooff et al., 2019; Volman et al., 2013) and well-being (Brummelhuis & Bakker, 2012b; Clinton et al., 2017; Sonnentag, Binnewies, & Mojza, 2010; Thiele Schwarz, 2011; Y.-R. Wang et al., 2019), especially when following work stressors (Sonnentag & Fritz, 2015). Specifically, psychological detachment has been associated with many positive outcomes, spanning both mental health (e.g., positive affect: Feuerhahn et al., 2014; Rhee & Kim, 2016; Sonnentag, Mojza, et al., 2008) and physical health (e.g., lower levels of psychosomatic health complaints: Taris et al., 2008), the work-home interface (e.g., relationship satisfaction: Rodríguez-Muñoz et al., 2017), and work motivation (e.g., work engagement: Siltaloppi et al., 2009; Sonnentag & Kühnel, 2016) (for a nomological network, see chapter 2.3.3).

These positive effects of psychological detachment from work particularly on individuals' well-being can be explained with the stressor-detachment model, which emphasizes the role of psychological detachment for employees' recovery from work stressors as a way to protect one's well-being (Sonnentag & Fritz, 2015). Besides putting emphasis on the outcomes of psychological detachment, this theoretical framework has been investigated also in terms of antecedents predicting psychological detachment from work. Prior research finds particularly constructs referring to individuals' behavior as well as the work situation as antecedents of detachment. For instance, in terms of behavior, work-related smartphone use after work is associated with lower levels of detachment (Derks, van Mierlo, & Schmitz, 2014; van Laethem et al., 2018); in terms of the work situation, high workload (Meier & Cho, 2019; Potok & Littman-Ovadia, 2014; Sonnentag & Kruel, 2006; Sonnentag, Kuttler, & Fritz, 2010) is associated with lower levels of psychological detachment.

Although the literature offers an extensive nomological network including antecedents and outcomes of psychological detachment from work among employees (Wendsche & Lohmann-Haislah, 2017), our knowledge on the role of psychological detachment in the entrepreneurship context is limited. The recovery literature suggests that findings from research with employees cannot be transferred directly to entrepreneurs because "the context of entrepreneurship is unique in several respects – from highly autonomous and meaningful work to the longest working hours of any occupation – which calls for dedicated research into entrepreneurial recovery" (Williamson et al., 2021, p. 1308). Empirical evidence supports the notion that research on recovery and well-being should be conducted with employees and entrepreneurs separately. For instance, a meta-analysis comparing the well-being of entrepreneurs and employees finds that entrepreneurs experience higher levels of cognitive well-being, such as life satisfaction, than employees (Stephan et al., in press). Interestingly, entrepreneurs also seem to experience both more positive feelings (i.e., happiness, enjoyment) and negative feelings (i.e., anger, stress) which may be due to the entrepreneurs' higher levels of job control and job demands in comparison to employees (Bencsik & Chuluun, 2021). These findings point to the importance of conducting research on entrepreneurs' well-being and recovery specifically with entrepreneurs as study participants and not only transfer findings from studies with employees as study participants.

Since the introduction of the construct of psychological detachment from work in 1998 (Etzion et al.), to date only seven articles, which were mostly published recently (six out of seven articles were published since 2018), have examined psychological detachment in the entrepreneurship context. Table 1 summarizes these articles in terms of methodology and main findings.

Table 1. Published articles on psychological detachment among entrepreneurs

Reference	Sample, design, and analysis	Main findings
Busch et al., 2021	16 couples with 18 small business owners Coaching intervention ANCOVA	Participants who received a coaching intervention show an increase in detachment after 3 weeks but not after 4 months.

Reference	Sample, design, and analysis	Main findings
Kollmann et al., 2019	122 entrepreneurs Cross-sectional Mediation	Entrepreneurial stressors are associated with higher levels of work-home interference (i.e., low detachment), which is positively associated with insomnia.
Murnieks, Arthurs, et al., 2020	329 entrepreneurs Lagged survey study Structural equation modeling	Perceived exhaustion has a negative effect on detachment.
Rauch, 2020	101 entrepreneurs Cross-sectional Regression analysis	Detachment buffers the negative effect of workaholism on well-being. Detachment does not intensify the positive effect of work engagement on well-being.
Taris et al., 2008	477 self-employed Cross-sectional Hierarchical regression analysis	Inability to detach is positively associated with exhaustion and physical complaints, and negatively associated with professional efficacy.
Wach et al., 2021	55 entrepreneurs 12-day diary study Multilevel analysis	Within persons, cognitive & emotional demands predict higher levels of problem-solving pondering (i.e., low detachment), which predict lower levels of well-being. Within persons, emotional demands predict higher levels of affective rumination (i.e., low detachment), which predict lower levels of well-being. At the between-person level, only emotional demands increase problem-solving pondering and affective rumination, but cognitive demands do not.
Weinberger et al., 2018	62 entrepreneurs 12-day diary study Multilevel analysis	Person-mean levels of problem-solving pondering (i.e., similar to low detachment) positively affect daily creativity; daily levels of problem-solving pondering do not affect subsequent levels of daily creativity.

Of these seven articles, three articles do not measure psychological detachment but use proxies for low levels of detachment, which were work-home interference (Kollmann et al., 2019), problem-solving pondering (Wach et al., 2021; Weinberger et al., 2018), as well as affective rumination (Wach et al., 2021). Moreover, three studies base their findings on cross-sectional data, which limit conclusions regarding causal inferences (Kollmann et al., 2019; Rauch, 2020; Taris et al., 2008). The academic knowledge on the role of psychological detachment among entrepreneurs is thus scarce, often based on proxies or cross-sectional samples, and is especially recently developing.

Drawing on the emerging literature stream on entrepreneurs' psychological detachment from work, scholars find evidence for the positive impact of detachment on well-being (Wach et al., 2021), in particular, lower levels of insomnia (Kollmann et al., 2019), perceived exhaustion, physical complaints, and higher levels of professional efficacy (Taris et al., 2008). Moreover, low average levels of detachment are linked to higher levels of daily creativity (Weinberger et al., 2018). Interestingly, entrepreneurial well-being (operationalized as low levels of emotional exhaustion) seems to also affect psychological detachment, such that lower levels of emotional exhaustions are associated with higher levels of psychological detachment (Murnieks, Arthurs, et al., 2020). In addition, entrepreneurial stressors (Kollmann et al., 2019) as well as cognitive and emotional demands at work (Wach et al., 2021) seem to be associated with lower levels of psychological detachment. To promote entrepreneurs' psychological detachment, prior research suggests a positive influence of a coaching intervention for couples on subsequent detachment (Busch et al., 2021).

Considering the extensive evidence from research on employees and the preliminary evidence from entrepreneurs (Taris et al., 2008; Wach et al., 2021) on the positive effects of psychological detachment on individuals' well-being, it is surprising how little we know about psychological detachment in the entrepreneurship context. Due to the positive impact on well-being, the scholarly investigation on entrepreneurs' psychological detachment from work potentially contributes to the emerging literature stream of entrepreneurial well-being (Shir et al., 2019; Stephan, 2018; Wiklund et al., 2019; Stephan et al., in press). The literature on entrepreneurial well-being has shown a particular interest in the impact of well-being on outcomes, which are important for the success of a venture, finding positive effects of well-being on venture performance and persistence (Stephan, 2018), innovative behavior (Williamson et al., 2019), financial success (Hatak & Zhou, 2021), and negative effects of well-being on both new venture withdrawal (Wincent et al., 2008) and exit intentions (Hessels et al., 2018; Sardeshmukh et al., 2021). Moreover, the entrepreneurs' mental and physical health seems to be crucial for the new venture, considering the strong dependence of the venture's survival on the entrepreneur (Torrès & Thurik, 2019).

These articles highlight the functional role of entrepreneurial well-being for entrepreneurial success (see Stephan, 2018, for a literature review on entrepreneurial well-being). Recognizing the importance of well-being to entrepreneurs and their ventures, in recent years, entrepreneurship scholars have started to study entrepreneurial well-being as a stand-alone outcome (Shir et al., 2019; Stephan et al., 2020; Stephan et al., in press). For instance, entrepreneur's person-work fit (Hmieleski & Sheppard, 2019) as well as their psychological functioning positively affect their well-being (Nikolaev et al., 2019), while stressors decrease entrepreneurial well-being (Stephan, 2018). By using well-being as an outcome variable, the entrepreneurship literature increasingly acknowledges that entrepreneurs also aim at achieving non-monetary goals (Hatak & Zhou, 2021; D. A. Shepherd, Wennberg, et al., 2019; Wach et al., 2016; Wiklund et al., 2019). This shift of the literature towards an integration of both venture-level performance and personal well-being goals is also reflected in findings from a recent panel study among leading entrepreneurship scholars, which finds that about half of the interviewed scholars believe that "by 2030, a vast majority of entrepreneurs will be unwilling to trade off physical and mental well-being for demands related to their venture" (van Gelderen et al., 2021, 1264).

Well-being is thus important for entrepreneurs and their ventures. However, there are many characteristics throughout the entrepreneurial journey that can impair entrepreneurs' well-being. Beyond the long working hours (Stephan & Roesler, 2010; Williamson et al., 2021), entrepreneurship involves a highly dynamic and uncertain process, which can be draining and stressful for the entrepreneur (Nikolaev et al., 2019; Stephan et al., in press). In this context, entrepreneurship is often described as a rollercoaster ride involving frequent ups and downs that can challenge an entrepreneur emotionally (Cock et al., 2020). These frequent downs constitute, for instance, entrepreneurial setbacks, which occur regularly and signal the entrepreneur that something in the venture is not going as expected or planned (Rauter et al., 2018). While these entrepreneurial setbacks can involve all types of problems ranging from informational barriers to personal problems (van Gelderen et al., 2011), entrepreneurship is a social process (Dimov, 2007) in which entrepreneurs interact with their team members to develop a product or service, their customers to sell their product or service, or investors, business angels, and venture capitalists to secure financing. All these types of stakeholders, while important for the

new venture's success (Fanelli & Misangyi, 2006; Laplume et al., 2008; Mitchell et al., 2021), can also induce adversity in the form of setbacks.

The conceptual background of this dissertation construes entrepreneurship as a special occupation, which can make entrepreneurs' psychological detachment difficult. Although the literature has recently emphasized the importance of well-being for the entrepreneur personally and their venture, our knowledge on whether, when, and how entrepreneurs psychologically detach and therefore protect their well-being, is limited.

1.2 Research problems, objectives, and methodological approaches

While entrepreneurs are known for their hard-working and committed work ethics, they are also known for barely psychologically detaching from work, which can impede their well-being. This dissertation builds on this tension as a starting point, for one, to understand psychological detachment as a construct, which is well-known in the scholarly field of organizational behavior, and to derive potential avenues for future research in the entrepreneurship context. For another, this dissertation aims at understanding the impact of work stressors (i.e., entrepreneurial setbacks) on psychological detachment by building on week-level longitudinal data of entrepreneurs.

In doing this, this dissertation mainly addresses two research questions. As outlined above, research on entrepreneurs' psychological detachment from work is scarce and underdeveloped. While the literature of organizational behavior has examined detachment extensively among employees, little is known about entrepreneurs' detachment. For this reason, this dissertation first focuses on the literature on psychological detachment as a research field in the scholarly field of organizational behavior. In particular, the following research questions are addressed:

> ***Research questions 1**: **(a)** What is the current state of research on psychological detachment? **(b)** How can the entrepreneurship literature benefit from this research?*

I[1] address these questions by conducting a systematic literature review on psychological detachment from work as a construct that has been extensively examined in the literature on organizational behavior but at the same time remains understudied in the entrepreneurship literature. I intend to make knowledge on detachment more easily accessible to the entrepreneurship context "by identifying relations, contradictions, gaps, and inconsistencies" consistent with recent recommendations how to conduct a systematic literature review (Siddaway et al., 2019, p. 752). Understanding how and when people detach and what the consequences are seems important for entrepreneurs and the entrepreneurship research community, given the demonstrated benefits of psychological detachment, in combination with the entrepreneurs' high involvement in their work and likely connected difficulties to detach from work. I summarize the commonly used methodologies and the main theoretical perspectives in relation to detachment. I further develop a nomological network around detachment, which presents all antecedents and outcomes that have been examined in relation to detachment. With this review, I specifically contribute to the literature on organizational behavior by providing an extensive overview on the existing knowledge surrounding detachment as well as discussions on research gaps. I further contribute to the literature on entrepreneurship and in particular entrepreneurial well-being by pointing to important future research avenues.

As outlined in the conceptual background above, the entrepreneurship process can be extremely draining and challenging. To understand whether different types of entrepreneurial setbacks, which refer to internal stakeholders (i.e., internal setbacks) and external stakeholders (i.e., external setbacks), affect psychological detachment, and how these relationships are contingent on entrepreneurs' effort, I address the following research questions:

> ***Research questions 2**: **(a)** To what extent do internal and external setbacks affect psychological detachment? **(b)** Which role does effort play in these relationships?*

I address these questions building on data from a week-level longitudinal study that were collected within the scope of a large data collection endeavor. I apply hierarchical linear

[1] For ease of reading, "I" is used consistently throughout the dissertation. However, the empirical study was developed mostly with co-authors as I outline in chapter 1.3, which is why in this chapter, I switch from "I" to "we".

modelling considering three levels (i.e., week, person, venture). We find that only internal but, surprisingly, not external setbacks impede psychological detachment one week later. As hypothesized, effort moderates these relationships in an opposing way, such that low levels of effort increase the negative effect of internal setbacks on subsequent psychological detachment and only high levels of effort make external setbacks detrimental for subsequent detachment.

With the systematic literature review and the longitudinal study on the relationship between entrepreneurial setbacks, effort, and detachment, this dissertation theoretically contributes to the entrepreneurship literature, in particular entrepreneurial setbacks and well-being, as well as to the literature on organizational behavior, in particular psychological detachment. Therefore, this dissertation reconciles the perspectives on psychological detachment of the scholarly fields of organizational behavior and entrepreneurship, and thereby elaborates on opportunities for future research endeavors. Because of the highly practical relevance of psychological detachment for entrepreneurs, I conclude this dissertation with practical implications for entrepreneurs, entrepreneurship coaches, and the entrepreneurs' private environment.

1.3 Structure of this dissertation

This dissertation consists of two main chapters, which I present in an overview in Table 2. First, a systematic literature review organizes the literature on psychological detachment from work and develops avenues for future research in the entrepreneurship literature (chapter 2). Second, the empirical study on entrepreneurial setbacks, effort, and detachment follows (chapter 3). Earlier versions of this manuscript were accepted for paper presentation at BCERC 2020, Knoxville, Unites States (conference cancelled due to Covid-19), and published in Frontiers of Entrepreneurship Research BCERC Proceedings 2020 (p. 74-79). My co-authors in this study, Prof. Dr. Nicola Breugst, Prof. Dr. Mirjam Knockaert, and Prof. Dr. Dr. Holger Patzelt, advised me regarding the data collection as well as the theoretical model and they reviewed the manuscript. The Methodology (chapter 3.3) and Results parts (chapter 3.4) of this manuscript include additional methodological considerations and analyses that are not included in the final manuscript. Finally, I discuss the overall theoretical implications of this dissertation and provide an

outlook on potential avenues for future research. I conclude this dissertation with practical implications of this research (chapter 4).

Table 2. Overview of the two studies in this dissertation

	Study 1: A systematic literature review on psychological detachment from work and implications for entrepreneurship research (chapter 2)	Study 2: When do entrepreneurial setbacks affect psychological detachment? The contingency role of effort (chapter 3)
Research questions	What is the current state of research on psychological detachment? How can the entrepreneurship literature benefit from this research?	To what extent do internal and external setbacks affect psychological detachment? Which role does effort play in these relationships?
Methodological approach	Systematic literature review: database search using EBSCO and Web of Science and structured analysis 175 articles, published between 1998 and 2021	Week-level longitudinal study: hierarchical linear modelling at three-levels (week, person, venture) 2,318 questionnaires of 257 entrepreneurs over 12 weeks
Main findings	Summary of theoretical perspectives and methodologies. Development of a nomological network around detachment. Identification of research gaps and avenues for future research in both organizational behavior and entrepreneurship	Only setbacks with respect to internal but not external stakeholders impede subsequent detachment. Effort moderates these relations in an opposing way, such that low effort strenghtens the negative effect of internal setbacks on detachment and high effort makes external setbacks detrimental for detachment
Contributions	Contributions to the scholarly fields of organizational behavior and entrepreneurship	Contributions to the literatures on entrepreneurial setbacks, well-being, and effort

2 A systematic literature review on psychological detachment from work and implications for entrepreneurship research

2.1 Introduction

Etzion et al. (1998) have first introduced detachment in the course of recovery research and find that employees who detached during a military reserve service could better benefit from their respite. Specifically, they were found to be less stressed and showed less burnout upon returning to work than did matched controls who continued working. Since Etzion et al.'s seminal paper, detachment has been a "hot" topic in organizational behavior. Indeed, psychological detachment is associated with many positive outcomes for the individuals themselves, such as psychological well-being (Belkin et al., 2020; Feuerhahn et al., 2014; Germeys & Gieter, 2018), less health problems (Sonnentag & Fritz, 2007b; Taris et al., 2008), recovery (Ragsdale et al., 2011; Volman et al., 2013), sleep quality (Chen & Li, 2020; Clinton et al., 2017; H. Liu et al., 2021; Sonnentag & Fritz, 2007b), and work engagement (Siltaloppi et al., 2009; Sonnentag & Kühnel, 2016). Moreover, psychological detachment has also been shown to reduce conflicts at home (Rodríguez-Muñoz et al., 2017) as well as work-family conflict (Demsky et al., 2014), and it is beneficial for relationship satisfaction (Jo & Lee, 2022; Rodríguez-Muñoz et al., 2017).

Acknowledging the importance of psychological detachment from work for individuals' health and the current state of knowledge on psychological detachment (see Wendsche & Lohmann-Haislah, 2017, for a meta-analysis; see Sonnentag & Fritz, 2015, for a theoretical article), I provide three reasons for why a systematic literature review is a useful next step to guide future research. First, detachment literature builds on different theoretical perspectives, such as recovery (e.g., Hobfoll, 1989; Meijman & Mulder, 1998; Sonnentag & Fritz, 2015), emotion (e.g., Fredrickson, 2001), and identity (e.g., Ashforth et al., 2000; S. C. Clark, 2000), which impedes the development of a coherent understanding of detachment from a theoretical point of view. Therefore, I aim at shedding light on these theoretical perspectives and offer starting points for future examination and theoretical reasoning (see chapter 2.3.5). Second, following Siddaway et al. (2019), a systematic literature review offers an "unbiased summary of what the cumulative

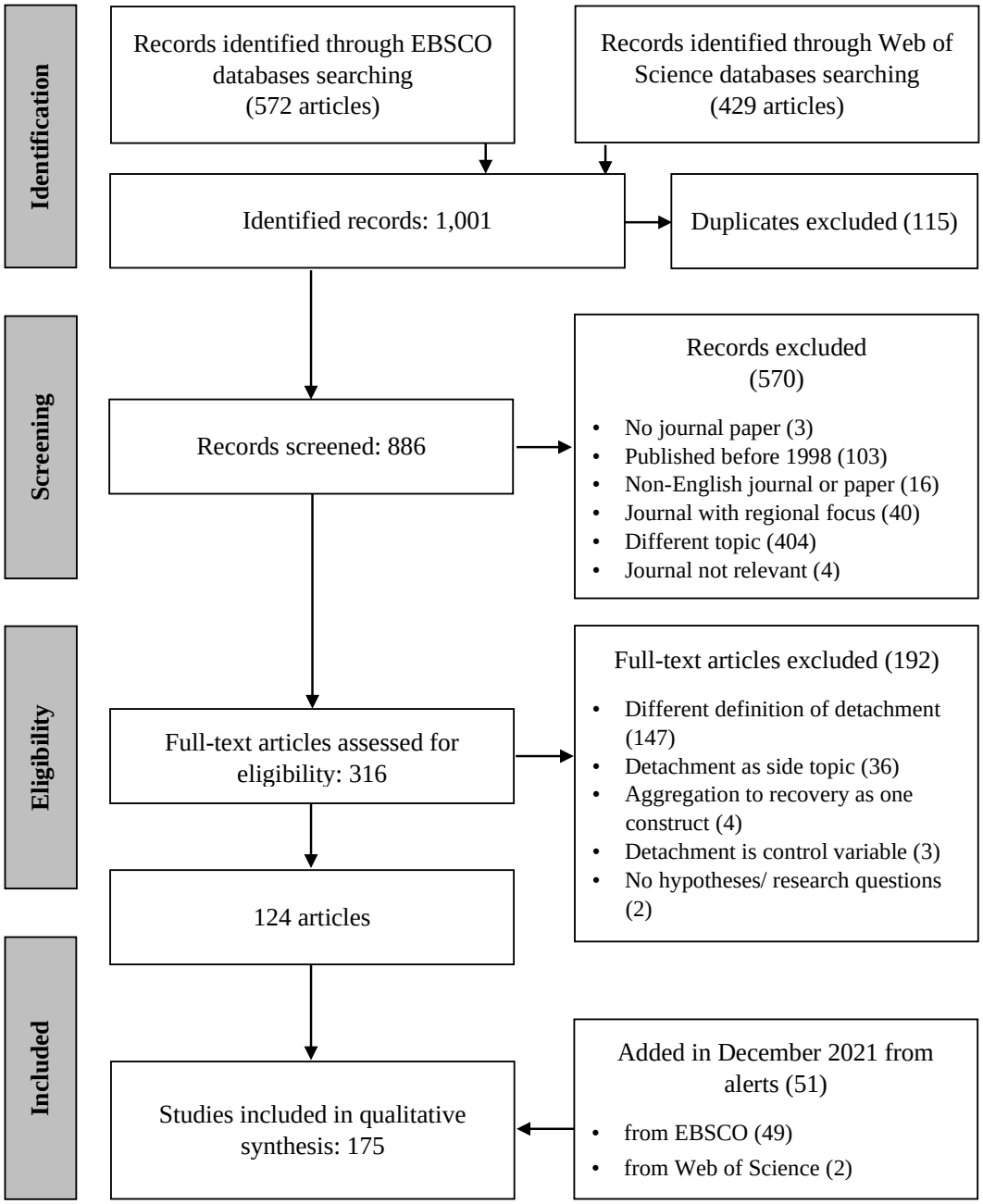
evidence says on a particular topic" (p. 751). Therefore, this review should move the field forward by summarizing procedures and commonly applied methodologies (see chapter 2.3.2) as well as developing a nomological network around the construct of psychological detachment (see chapter 2.3.3). Third, I identify empirical and conceptual research gaps and provide insights into what adjacent disciplines can learn from prior research on detachment (see chapter 2.4). Accordingly, the purpose of this article is to organize knowledge around psychological detachment in terms of theory, empirical findings, and avenues for future empirical investigation, with a particular focus on entrepreneurship as entrepreneurs are highly involved with their work (Cardon et al., 2005; Hoang & Gimeno, 2010; Murnieks & Mosakowski, 2007; Stephan, 2018) and we lack an understanding of whether, when, and how they detach.

In what follows, I first describe the selection criteria for this review (2.2.1) and the articles I selected (2.2.2). In the main part of this review, I give a definition of detachment (2.3.1), review methodological approaches (2.3.2), describe the nomological network around detachment (2.3.3), and introduce theories applied in the detachment literature (2.3.5). I conclude this review with a discussion on the boundaries of detachment (2.4.1), on the importance of contextual influences (2.4.2), and potential starting points for integrating detachment in the entrepreneurship literature (2.4.3).

2.2 Methodological approach

I conducted a systematic literature search (Tranfield et al., 2003; Siddaway et al., 2019) using the EBSCO databases PsychArticles and Business Source Complete as well as Web of Science (Thompson Reuters). I selected EBSCO and Web of Science as the main platforms for my literature search because together they cover most of the relevant journals in both organizational behavior and entrepreneurship research and are used in other systematic literature reviews as well (Howard et al., 2022; Konlechner & Ambrosini, 2019).

Figure 1. Flow diagram based on PRISMA statement (Moher et al., 2009)



2.2.1 Selection of articles

To identify articles for this literature review, I followed the guidelines of the PRISMA (i.e., acronym for "Preferred Reporting Items for Systematic Reviews and Meta-Analyses") statement (Moher et al., 2009). Figure 1 describes my procedure. I conducted my

initial search in June 2019. I searched the abstracts[2] for the term *detach** [3] to capture different grammatical forms (i.e., noun, verb, and gerund). I searched for articles that are in English and that are published in academic, peer-reviewed journals. I included articles that are published between 1998 and 2021 (incl. in press articles) because Etzion et al.'s (1998) article marks the start of the literature stream (Sonnentag & Fritz, 2015; Wendsche & Lohmann-Haislah, 2017).

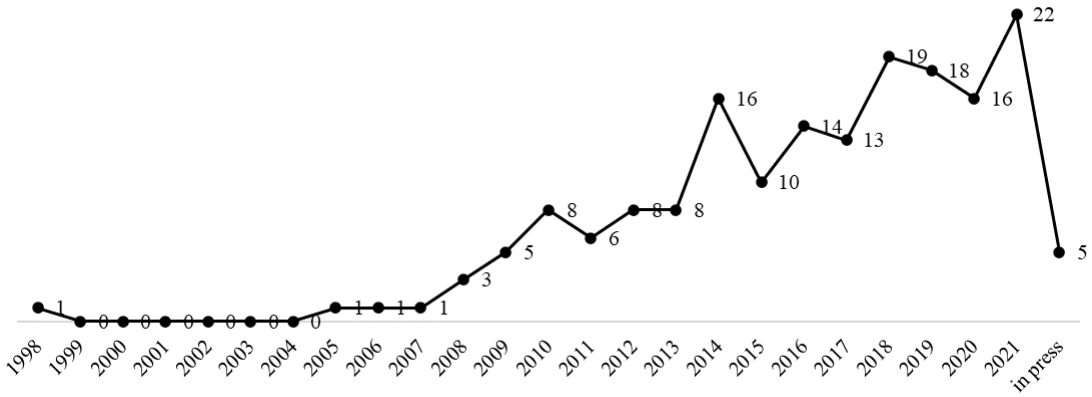
Following these search criteria, my EBSCO search yielded 572 results. For Web of Science, I reduced the search to articles listed in *Science Citation Index Expanded (1945-present)* and *Social Sciences Citation Index (1985-present)* to obtain more precise results. I further filtered the Web of Science search results for relevant categories which were Psychology, Psychology Experimental, Psychology Applied, Management, Psychology Multidisciplinary, Psychology Social, and Business. The Web of Science search yielded 429 results. I then merged EBSCO and Web of Science search results, excluded duplicates, and started with the screening procedure. First, I screened records based on titles and journals. I excluded commentaries, introductions to special issues, and articles from journals that are not in English, refer to a regional focus or to a different topic (see Appendix 1, for an overview of the excluded journals). Second, I analyzed full-text articles. I excluded articles that did not fit the definition of psychological detachment from work (Etzion et al., 1998; Sonnentag & Fritz, 2015). These include, for instance, articles that consider detachment from a clinical perspective (e.g., trauma). I also excluded articles that only peripherally examine detachment, that is, for instance, empirical articles in which detachment is not measured (e.g., Kollmann et al., 2019) or that mention it, but do not study it. Third, I continuously added articles that fit my selection criteria from alerts of EBSCO and Web of Science, including articles published until December 31, 2021.

[2] EBSCO abstract search (i.e., AB) included the search areas abstract, title, subject terms, source, and author; Web of Science abstract search (i.e., TS) included title, abstract, keyword, and indexing field.
[3] Boolean search term for EBSCO search: detach* AND (psycholog* OR Manage* OR Business* OR Economic* OR Entrepren* OR Administr*). For Web of Science search, I used the term detach* because the database format allows for excluding categories afterwards.

2.2.2 Description of articles

My final article selection includes 175 articles of which I identified 161 as empirical and 14 as conceptual (i.e., review, conceptual, or meta-analysis). Articles are published in 47 different journals covering a wide range of international impact rankings (SCImago) like leading management journals (e.g., *Academy of Management Journal*: Bono et al., 2013) and specific field journals (e.g., *International Journal of Conflict Management*: Sonnentag et al., 2013) (see Appendix 2, for an overview of the journals). I identified three articles referring to Entrepreneurship (Busch et al., 2021; Taris et al., 2008; Wach et al., 2021)[4]. I coded all empirical articles for their methodological characteristics (e.g., measurement frequency, measure of detachment, sample description), level of analysis, role of detachment in the examined research model (e.g., detachment as antecedent, outcome, moderator), themes, and theoretical perspective.

Figure 2. Number of psychological detachment articles per year



Note: "In press" includes articles that were published only online until December 31, 2021.

As displayed in Figure 2, I noticed a positive trend in the number of published articles over the years, going up from one publication in 2005 to 16 in 2014. This trend can likely

[4] As listed in Table 1 in the Introduction, four additional articles examine detachment among entrepreneurs but are not included in this review: Kollmann et al. (2019) use work-home interference as a proxy but do not measure detachment. Murnieks, Arthurs, et al. (2020) only peripherally examine detachment (i.e., the construct is not included in the hypotheses). Rauch (2020) is published in the "Journal of Enterprising Culture", which is neither included in EBSCO nor Web of Science. Weinberger et al. (2018) use problem-solving pondering as a proxy but do not measure detachment. I consider these articles in the future research discussion (chapter 2.4).

be explained by the publication of Sonnentag and Fritz' (2007b) *Recovery Experience Questionnaire* that inspired other scholars to measure detachment. Most articles are published in 2021 (n = 22). Many studies on detachment stem from German universities around research groups and (former) doctoral students of Sabine Sonnentag from University of Mannheim (formerly, universities of Constance and Brunswick) who has (co)authored 29 articles.

2.3 Review of research on psychological detachment

In this section, I review research on psychological detachment regarding (1) definition, (2) methodology, (3) nomological network, and (4) theoretical perspectives.

2.3.1 Defining psychological detachment from work

Etzion et al. (1998) introduce detachment as "the individual's sense of being away from the work situation" (p. 579). In short, psychological detachment means mentally switching off. During my literature search, I noticed that the term "detachment" has various meanings. I refer to detachment *from work* – with work in the sense of everyday professional activities – and distinguish it from research on psychological detachment from an organization (Kong & Ho, 2018) or founders' disengagement from their ventures (Rouse, 2016). Following the predominant definition applied in prior research (Etzion et al., 1998; Sonnentag & Fritz, 2007b), I further refer to detachment from work *during non-work time*, which can be any time that is not primarily declared working time, varying in duration from work breaks (e.g., Demerouti et al., 2012) to sabbatical leaves (e.g., Davidson et al., 2010). Detachment includes both behavioral and cognitive dimensions: Behavioral in the sense of not pursuing any work-related tasks, such as reading work emails, cognitive in the sense of not thinking about work (Sonnentag & Fritz, 2007b, 2015). Accordingly, even when people are engaged in private activities (i.e., behavioral detachment), such as being in the gym or reading a book, they may still be thinking about work-related issues (i.e., low cognitive detachment) and therefore do not psychologically detach.

Detachment is sometimes confused with *work reflection* and *rumination*. Work reflection involves thinking about work (e.g., tasks, relationships) in a positive or negative way (Fritz & Sonnentag, 2005, 2006; Meier et al., 2016). Positive work reflection seems to be beneficial for individuals' well-being (Meier et al., 2016), while individuals engaging in negative work reflection during vacation are prone to experience lower levels of well-being (Fritz & Sonnentag, 2006; Meier et al., 2016). Although work reflection also happens during non-work time and refers to thoughts around work, it is different from detachment because it looks at the *presence* of thinking about work rather than at the absence thereof (Sonnentag & Fritz, 2015). Similar to work reflection, work rumination involves "unintentional preservative thoughts in the absence of obvious external cues" (Cropley & Millward Purvis, 2003, p. 198). Work rumination encompasses three dimensions of cognitive engagement with work during non-work time, that is, *affective rumination*, *problem-solving pondering*, and *detachment* (Cropley et al., 2012; Cropley & Zijlstra, 2011): Affective rumination refers to emotional reactions when an individual perceives issues at work as unsolvable (Cropley et al., 2012; Cropley & Zijlstra, 2011). Problem-solving pondering can have positive implications for individuals "when they are able to think of a solution for their problem" (Cropley & Zijlstra, 2011, p. 493), such that it may enhance, for instance, idea generation (Weinberger et al., 2018). Detachment describes the extent to which people can "leave work issues behind" (exemplary item from the *Work-Related Rumination Questionnaire* as in Cropley et al., 2012, p. 25). In this review, I did not include articles exclusively on work reflection or rumination because detachment has been sufficiently conceptualized by previous work as a distinct construct (e.g., Sonnentag & Fritz, 2007b, 2015; see Meier et al., 2016, for a three-factor confirmatory factor analysis with positive work reflection, negative work reflection, and detachment; see Cropley et al., 2012, for a three-factor confirmatory factor analysis with affective rumination, problem-solving pondering, and detachment).

2.3.2 Operationalization, measurement, and level of analysis

In what follows, I analyze how detachment has been operationalized. Most empirical articles (98.8% of 161 empirical articles) utilize survey data measuring detachment with validated scales, as presented in Table 3. Most quantitative articles use the 4-item

detachment subscale from the Recovery Experience Questionnaire (Sonnentag & Fritz, 2007b) that comprises detachment along with the recovery experiences control, mastery, and relaxation. These recovery experiences are significantly correlated with detachment (relaxation: r = .46/ .42, control: r = .37/ .41, mastery: r = .21/ .19; Sonnentag & Fritz, 2007b) but various studies show that the four recovery experiences statistically load on different factors and are accordingly distinct constructs (Bakker et al., 2015; Sonnentag & Fritz, 2007b). Recent literature suggests the existence of recovery profiles, that is, "different combinations of recovery experiences on a daily basis" (Chawla et al., 2020, p. 32), combining levels of those four components (e.g., profile "plugged in") with differential effects on different forms of well-being and work behaviors (Chawla et al., 2020). While the original items from Sonnentag and Fritz (2007b) rather capture an individual's general levels of detachment (i.e., trait version), authors often add pre-clauses to these items to adapt question items to the time of interest (i.e., state version), such as "last night" (Chawla et al., 2020), "during the weekend" (Fritz, Sonnentag, et al., 2010; Hahn, Binnewies, & Haun, 2012), and "during leisure time" (Hahn & Dormann, 2013). Bakker et al. (2015) conducted a validation study for the state version of the Recovery Experience Questionnaire with frequently used pre-clauses: They find that both the trait and state questionnaire version are sufficiently valid instruments in terms of factor structure, reliability, and model fit. As an alternative to the Recovery Experience Questionnaire, previous works use the subscale detachment of the Work-Related Rumination Questionnaire (Cropley et al., 2012), while Wach et al. (2021) utilize the subscales affective rumination as well as problem-solving pondering of the Work-Related Rumination Questionnaire to account for different types of detachment[5]. Another measure divides detachment into cognitive, emotional, and physical elements (Jonge et al., 2012). Interestingly, DeArmond et al. (2014) operationalize detachment with an overcommitment scale (Siegrist et al., 2004).

As an alternative to using (only) survey data, fifteen articles apply an experimental or quasi-experimental approach. Experimental manipulation often includes an intervention,

[5] Although I excluded articles examining related constructs but not detachment itself, as I outlined above, I included the article by Wach et al. (2021) because the authors build their theoretical reasoning on the psychological detachment literature but needed to differentiate between types of detachment due to their research model.

such as positive reflection exercises (Bono et al., 2013: three good things), a meditation training (Hülsheger et al., 2015), or an expressive writing task (Michailidis & Cropley, 2019). Experiments based on interventions show that detachment is trainable and, therefore, learnable (Bono et al., 2013; Hahn et al., 2011; Michel et al., 2014). In studies with a quasi-experimental research design, participants are naturally divided into a control group that is working as always and an experimental group that is using smartphones (Derks, Brummelhuis, et al., 2014), takes a sabbatical leave (Davidson et al., 2010), or that is on a military reserve service (Etzion et al., 1998). Three articles apply a mixed method design in which qualitative data are quantified (Braukmann et al., 2018: taxonomy of information and communications technology affective events; Busch et al., 2021: interviews and intervision sessions; Loveday et al., 2018: content analysis of best-possible-selves texts). In addition to survey data, two studies use data from wristbands that participants wore during sleep (Pereira & Elfering, 2014; Wach et al., 2021).

Table 3. Measurement scales of detachment

Scale, source, reliability	Items
Recovery Experience Questionnaire (Sonnentag & Fritz, 2007b): subscale detachment (.84 – .85)	I forget about work. I don't think about work at all. I distance myself from my work. I get a break from the demands of work.
State version of Recovery Experience Questionnaire (Bakker et al., 2015): subscale detachment (.88 – .95)	Today, during my off-job time,… …I forgot about work. …I didn't think about work at all. …I distanced myself from my work. …I got a break from the demands of work.
Detachment from work (Etzion et al., 1998; .76)	"six items concerning similarity of service activities to back-home job activities, amount of contact with the workplace during reserve service (e.g., visits, phone calls), and thinking about the back-home job during service" (p. 580)
Psychological detachment (Sonnentag & Bayer, 2005) (.72 – .91), e.g., applied by Chong et al. (2020) and Jo and Lee (2022)	I forgot completely about my working day. I could 'switch off' completely. I had to think about my work again and again. (reversed)

Scale, source, reliability	Items
Psychological detachment (Z. Xu & Guo, 2019) (.97), in addition to items 1 and 2 from Recovery Experience Questionnaire	I do not worry about IS [information systems] security issues. I do not waste time and energy on thinking about IS security issues.
Overcommitment (Siegrist et al., 2004; .64 – .82), e.g., applied by DeArmond et al. (2014) as a measurement of low detachment	I get easily overwhelmed by time pressures at work. As soon as I get up in the morning I start thinking about work problems. When I get home, I can easily relax and 'switch off' work. (reversed) People close to me say I sacrifice too much for my job. Work rarely lets me go, it is still on my mind when I go to bed. If I postpone something that I was supposed to do today I'll have trouble sleeping at night.
Demand-Induced Strain Compensation (Jonge et al., 2012): cognitive (item 1, 2; n/a), emotional (3, 4; n/a), and physical detachment after work (5, 6; n/a)	After work,… …I mentally distance myself from work. …I put all thoughts of work aside. …I emotionally distance myself from work. …I keep all emotions from work aside. …I physically distance myself from work. …I shake off the physical exertion from work.
Work-related rumination questionnaire (Cropley et al., 2012): affective rumination (n/a), problem-solving pondering (n/a), detachment (n/a)	Affective rumination (5 items): e.g., Do you become tense when you think about work-related issues during your free time? Are you annoyed by thinking about work-related issues when not at work? Problem-solving pondering (5 items): e.g., In my free time I find myself re-evaluating something I have done at work. I find solutions to work-related problems in my free time. Detachment (5 items): e.g., Do you find it easy to unwind after work? Do you leave work issues behind when you leave work? (Full list of items n/a)
Faulty Attitudes and Behaviour Analysis (Richter et al., 1999): subscale	4 items, e.g.: I find it difficult to switch off after work.

Scale, source, reliability	Items
disturbed relaxation ability (.83 as applied by Schulz et al., 2019)	(Original source n/a)
Detachment-Recovery, Autonomy, Mastery, Meaning, and Affiliation framework (Newman et al., 2014): applied as a coding scheme for content analyses of qualitative data, e.g., by Loveday et al. (2018)	

Most empirical articles apply a daily diary research design (n = 61) because detachment fluctuates throughout the day with moderate to high variance ranging from about thirty percent (Bono et al., 2013) to about seventy percent (Derks & Bakker, 2014). The day-level is the most common time period, with authors first collecting baseline data and then diary data, often for several times a day (e.g., Chawla et al., 2020: morning and afternoon for 5 days; Hülsheger, 2016: morning, work break, end of work, and bedtime for 5 days; Ouyang et al., 2019: morning, late afternoon, and evening for 10 days). Some authors refer to the effects of work breaks (e.g., Bosch et al., 2018) or the time between work shifts (e.g., Michel et al., 2016). Twenty-five studies use longitudinal datasets with time lags ranging from two days (e.g., Fritz, Sonnentag, et al., 2010) to two years (Feldt et al., 2013). When weekends are the non-work time period of interest, researchers often apply longitudinal data collections with short measurement intervals, such as Ragsdale and Beehr (2016) who measure variables at three occasions within one week, namely Wednesday for the baseline, Friday afternoon before the weekend, and Monday morning after the weekend. According to a study by Sonnentag, Binnewies, and Mojza (2010), individuals' *general* levels of detachment seems to be relatively stable over a 12-month interval (r = .70). Despite the high intraindividual variance of detachment, cross-sectional research designs are frequent (n = 70)[6], sometimes combined with diary study elements (e.g., Op den Kamp et al., 2018).

With regard to the level of analysis, 90.6% of all empirical articles look at the individual, fourteen articles also measure the perspective of the partner (e.g., Y. Park & Fritz, 2015) or other family members (Sonnentag & Kruel, 2006). Only three articles consider other sources within the work environment, that is, co-workers (Demsky et al., 2014; Fritz, Yankelevich, et al., 2010) and supervisors (Bennett et al., 2016). Almost all studies rely

[6] Articles can include more than one study and can be, thus, coded multiple times.

on employee samples (95.0%; the percentage refers to articles in which the majority of the sample consists of employees or "diverse" or "convenience" samples), while few studies examine students (e.g., Taylor et al., 2020), managers (e.g., Huyghebaert et al., 2018), or entrepreneurs (e.g., Wach et al., 2021). Presumably due to the time-consuming and effortful research design of diary studies, many studies rely on diverse, convenience samples where participants stem from diverse sectors, positions (i.e., hierarchy levels), and professions. Sample sizes for diary studies range from 57[7] (Michel et al., 2016) to 425 individuals (Rhee & Kim, 2016). The highest sample size overall is 3,937 individuals in a cross-sectional study (Schulz et al., 2019), while the smallest sample size represents the basis of a qualitative study with 14 individuals (Cho & Chew, 2021).

2.3.3 Nomological network of psychological detachment

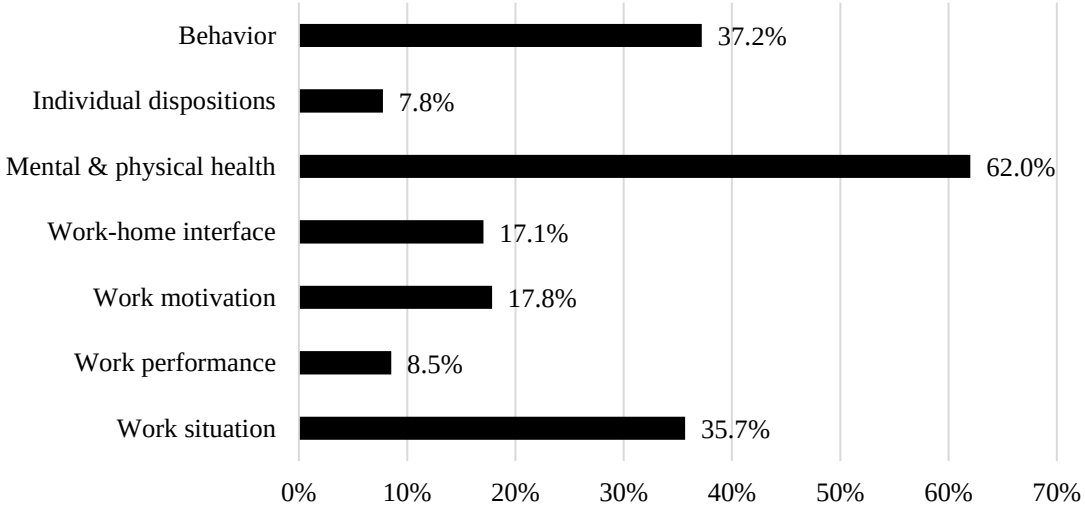
To understand the current situation of research on psychological detachment, I screened all hypotheses of the reviewed empirical articles for the role of detachment and involved constructs. Most articles (n = 90) look at detachment as the dependent variable, indicating that authors intend to thoroughly understand detachment using other variables. Scholars also examine detachment as an independent (n = 69), mediator (n = 50), and moderator variable (n = 40). I clustered constructs appearing in the hypotheses into thematic perspectives, which are behaviors, individual dispositions, mental and physical health, work situation, work motivation, work performance, and work-home interface. Figure 3 shows that mental and physical health, behavior, and work situation occur most frequently. Following the prevalent stressor-detachment model (Sonnentag & Fritz, 2015) (a more detailed description follows in 2.3.5), challenging characteristics of the work situation lead to lower levels of detachment which can then compromise mental and physical health. Behavior involves activities to influence levels of detachment, such as non-work time activities, interventions, or the handling of communication devices.

I outline a nomological network with all themes and their associated constructs below. The literature examines these themes as both antecedents and outcomes. Constructs

[7] Number refers to the lowest sample size in an article. Some articles include lower sample sizes in a single study but consist of multiple studies.

describing the work situation, such as job demands and workload, are mostly examined as occurring prior to detachment (e.g., Sonnentag & Kruel, 2006), whereas health variables, such as affect and sleep, are mostly examined as occurring after detaching (e.g., Fritz, Sonnentag, et al., 2010; Chen & Li, 2020). Surprisingly, some constructs are examined both as antecedents and outcomes, for instance, negative affect (antecedent: Sonnentag & Lischetzke, 2018; Volmer et al., 2012; outcome: e.g., Sonnentag, Mojza, et al., 2008; Y.-R. Wang et al., 2019) and ego depletion (both antecedent and outcome in: Germeys & Gieter, 2018).

Figure 3. Nomological network of psychological detachment: thematic perspectives



■ Percentage of 129 empirical articles in which detachment is an independent, dependent, or mediating variable (based on hypotheses). Multiple themes per article are possible.

2.3.3.1 Antecedents of psychological detachment

In the following, I review findings on research on constructs shaping detachment, as presented in Figure 4 (including detachment as a mediator variable), structured into their overall themes.

Work situation. The literature frequently examines an individual's work situation with a focus on job demands. Findings on job demands are mixed: Chen et al. (2017) find that job demands lead to lower levels of detachment; while Haun et al. (2018) do not find

significant negative effects of quantitative and emotional job demands on detachment. Therefore, I take a closer look at different types of demands: High work intensity (Singh et al., 2016) and high workload (Meier & Cho, 2019; Potok & Littman-Ovadia, 2014; Sonnentag & Bayer, 2005; Sonnentag & Kruel, 2006; Sonnentag, Kuttler, & Fritz, 2010) are associated with lower levels of detachment, presumably because workload leads to excessive working, which in turn is associated with lower levels of detachment (Huyghebaert et al., 2018). Certain job events may also reduce detachment: Empirical findings reveal that social stressors at work (Pereira & Elfering, 2014), workplace bullying (Rodríguez-Muñoz et al., 2017), workplace ostracism (Chen & Li, 2019, 2020), and social conflicts with customers (Volmer et al., 2012) are associated with lower levels of detachment. What organizations expect from their employees seems to influence employees' behavior in relation to detachment: when organizations expect from their employees that they monitor their emails, employees experience lower levels of detachment, partially because employees spend more time for work emails after work (Belkin et al., 2020); and the perceived norm for segmentation of work and private lives is associated with higher levels of detachment, partially because employees use less technology at home for work (Y. Park et al., 2011).

Behavior. Intervention studies show that people can learn how to detach. An experimental study, for instance, shows that individuals experience higher levels of detachment when they have received a recovery training (Hahn et al., 2011). In terms of non-work time, resource-providing weekend activities, such as reading and social activities (Ragsdale et al., 2011), and exercising after work are positively (Feuerhahn et al., 2014; van Hooff et al., 2019), while resource-consuming weekend activities, such as preparation for work and housekeeping, are negatively associated with detachment (Ragsdale et al., 2011). Besides these non-work time behaviors promoting detachment, individuals can also cognitively engage in mechanisms that increase detachment. One prominent cognitive mechanism is mindfulness, which refers to "the state of being attentive to and aware of what is taking place in the present" (Brown & Ryan, 2003, p. 822). Specifically, trait mindfulness is associated with changes in daily detachment over the work week, such that only individuals who have low levels of trait mindfulness (as opposed to high trait mindfulness) detach less at the start of the work week and more at the end of the week (Hülsheger et al., 2014).

Many behaviors that can impede detachment refer to work-related matters. Studies on working behavior show, for instance, that hours of overtime (Sonnentag & Fritz, 2007b), working excessively but not compulsively (Huyghebaert et al., 2018), and extended work availability (Dettmers et al., 2016) are negatively related to detachment. Moreover, several studies find negative associations of work-related smartphone use after work (Derks, van Mierlo, & Schmitz, 2014; van Laethem et al., 2018) and technology use at home for work-related matters (Y. Park et al., 2011) with detachment. Contrary, Ohly and Latour (2014) find a significant *positive* association of smartphone use for work in the evening with detachment. Additional analyses show, though, that the effect differed with the duration of smartphone use, such that intense smartphone use seems to be indeed detrimental to detachment (Ohly & Latour, 2014).

Individual dispositions. Some authors consider dispositional, stable characteristics that form both intra- and interindividual trajectories of psychological detachment. The literature suggests that core self-evaluations (Bipp et al., 2019), emotional stability (Sonnentag & Fritz, 2007b; Wendsche & Lohmann-Haislah, 2017), and recovery-related self-efficacy (Sonnentag & Kruel, 2006) increase detachment. However, H. I. Park and Lee (2015) do not find a significant effect of recovery-related self-efficacy on detachment. An individual's preference for setting boundaries between work and private life seems to help individuals to detach (Foucreault et al., 2018; Hahn & Dormann, 2013; Y. Park et al., 2011). In particular, spatial work-home boundaries are associated with higher levels of detachment, whereas technological ones are not (Sonnentag, Kuttler, & Fritz, 2010).

Mental and physical health. Although mental and physical health is typically an outcome of detachment, some authors also consider it as preceding detachment. Negative affectivity is associated with low detachment (Sonnentag, 2012; Wendsche & Lohmann-Haislah, 2017). Because negative affectivity can influence how individuals perceive their lives and, therefore, evaluate their levels of detachment, some researchers include negative affectivity as a control variable in their models to rule out an undesired bias of a general negative view of the world (e.g., Sonnentag, Binnewies, & Mojza, 2010) but this procedure is viewed controversially as it may also reduce systematic variance in detachment that researchers want to explain focusing on more specific antecedents (Spector et

al., 2000). In terms of positive affectivity, Ragsdale et al. (2016) find that the interplay between positive and negative affectivity is important for subsequent detachment: they find that low levels of positive affectivity in combination with high levels of negative affectivity make it difficult to detach after low-effort activities during the weekend. Emotions referring to one's job seem to affect detachment after work: anxiety (Cangiano et al., 2019), emotional dissonance at work (Sonnentag, Kuttler, & Fritz, 2010), and trying to communicate a positive mood to the outside (i.e., faked positive emotions and suppressed negative emotions) (Gu et al., 2020) mitigate detachment.

Work motivation. The general attitude towards work seems to determine whether individuals can detach from their work. The literature finds that overcommitment to work (Potok & Littman-Ovadia, 2014), calling intensity (i.e., "a consuming, meaningful passion people experience toward a domain"; Dobrow & Tosti-Kharas, 2011, p. 1001) for work (Clinton et al., 2017), heavy work investment (e.g., workaholism) (Wendsche & Lohmann-Haislah, 2017), and job involvement, that is, "the relevance the job has for one's life" (Sonnentag & Kruel, 2006, p. 201), make it more difficult for individuals to detach from their work (Kühnel et al., 2009; Y. Park et al., 2011; Sonnentag, 2012; Sonnentag & Kruel, 2006). According to Kühnel et al. (2009), job involvement seems to follow a dual pathway because it is detrimental for detachment but beneficial for work engagement. Since many authors rely on samples with presumably different degrees of job involvement (e.g., school teachers: Sonnentag & Kruel, 2006; nurses: Kühnel et al., 2009), for instance, Taylor et al. (2020) report only low levels of job involvement for their sample of working students, the reported effects may not be generalized to occupational groups with high degrees of job involvement, such as entrepreneurs who tend to highly identify with their work (Hoang & Gimeno, 2010), and may have differing trajectories of detachment.

Work-home interface. Scholars usually analyze the work-home interface as an outcome of detachment as well. As an antecedent, especially how the partner deals with detachment seems to be important: The partner's detachment (Hahn et al., 2014; Hahn & Dormann, 2013), the partner's preference for segmentation (Hahn & Dormann, 2013) as well as spousal recovery support (Y. Park & Fritz, 2015) are positively related to detachment.

Figure 4. Antecedents of psychological detachment

Behavior
Activities at work: lunch break with supervisor/ colleagues, work-related/ private lunch conversation
Cognition: emotional rumination/ inhibition, mindfulness, problem-solving pondering, proactive vitality management, reflecting on positive events, respite activities, restraint coping, state optimism
Communication: (autonomous/ controlled motivation for) work-related smartphone/ technology/ ICT use (at home), constant connectivity, home office*/ mobile work, social cyberloafing
Intervention: coaching, expressive writing, meditation, mindfulness, planning, relaxation/ mastery microbreaks, recovery training
Non-work time: absorption in activities with partner, cyber leisure, exercise/ (strenuous) physical activity, resource-providing/ -consuming/ low-effort/ work-related weekend activities, volunteer work, work-related/ household/ childcare/ social/ low-effort activity, work to nonwork boundary crossing behavior
Working behavior: extended work availability, hours of overtime, workaholic behavior, working excessively/ compulsively, working hours

Individual dispositions
Attitude towards oneself: core self-evaluations, entrepreneurial*/ general*/ recovery-related self-efficacy, negative reactions to imperfection (perfectionism), self-compassion*, self-esteem
Personality: conscientiousness, emotional labor profiles, emotional stability, proactive personality
Work identity: leader identity, work experience*

Mental & physical health
Well-being: anxiety, ego depletion, emotional dissonance, exhaustion, faked positive emotions, negative affect, vigor, suppressed negative emotions, threat emotions

Work-home interface
Family: family-to-work conflict, partner's detachment/ preference for segmentation, self-family facilitation, spousal recovery support
Work to nonwork boundary: preference for segmentation, spatial/ technological

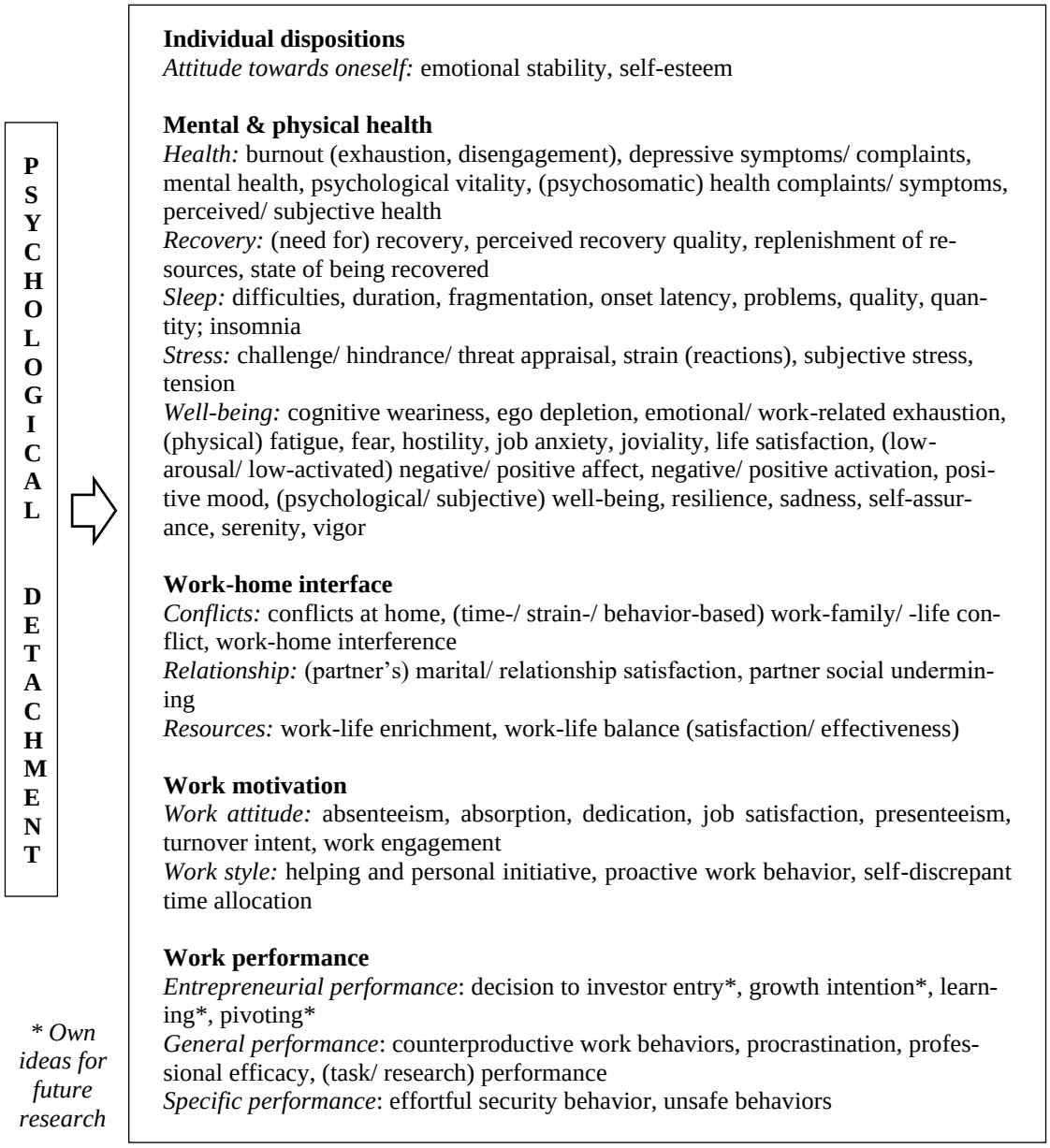
Work motivation
Work attitude: calling intensity, drive, engagement, effort-reward imbalance & overcommitment patterns, job involvement, meaningfulness of work, overcommitment, passion*, promotion/ prevention focus

Work situation
Job demands: (chronic) time pressure, (cognitive/ emotional/ quantitative) job demands, self-control demands, conflicts with customers, illegitimate/ unfinished tasks, role ambiguity, role conflict, triage, perceived externalities, situational constraints, workload, work intensity, work pressure
Job events: positive/ negative evening information and communication technology events/ workplace events, social stressors, workplace aggression/ bullying/ incivility/ ostracism
Job resources: job control, job skill discretion, job resources, colleagues/ emotional/ organizational/ social/ supervisor support
Organizational characteristics: org. expectations for email monitoring, interpersonal justice, environment*, industry*, venture stage*, financial means*, perceived segmentation norm, supervisor's set for employee recovery norms, leader-member exchange, workplace telepressure
Time: weekday

PSYCHOLOGICAL DETACHMENT

** Own ideas for future research*

Figure 5. Outcomes of psychological detachment



** Own ideas for future research*

2.3.3.2 Outcomes of psychological detachment

Below I review outcomes of detachment, in the order of importance of their respective themes, as presented in Figure 5 (including detachment as a mediator variable).

Mental and physical health. Mental and physical health is the predominant outcome of detachment. Studies find that low levels of detachment are connected to the experience of depressive symptoms (Gluschkoff et al., 2017; Hentrich et al., 2018; Sonnentag & Fritz, 2007b), psychosomatic health complaints (Taris et al., 2008), and general health complaints (Sonnentag & Fritz, 2007b). Severe consequences of low detachment for health may be explained by the effects of detachment on sleep, as both too little and poor sleep are correlated negatively with health outcomes, such as levels of strain and fatigue (Litwiller et al., 2017): The literature finds that low levels of detachment are associated with sleep problems (Kinnunen, Feldt, Sianoja, et al., 2017; Sianoja et al., 2018; Sonnentag & Fritz, 2007b), insomnia over time (Gu et al., 2020), and low sleep quality (Chen & Li, 2019). In turn, high levels of psychological detachment seem to have a positive impact on individuals' recovery (Volman et al., 2013), in particular, recovery quality (Ragsdale et al., 2011) and lower levels of need for recovery (Siltaloppi et al., 2009; Sonnentag & Fritz, 2007b; Sonnentag, Kuttler, & Fritz, 2010).

One form of mental health is psychological well-being: Evidence from longitudinal (time lag: 12 months, Sianoja et al., 2018), diary (Chawla et al., 2020), and cross-sectional studies (Singh et al., 2016; X. Wang et al., 2018), as well as from two meta-analyses (Bennett et al., 2018; Wendsche & Lohmann-Haislah, 2017) suggests that detachment has a positive impact on psychological well-being. Scholars theoretically distinguish between hedonic well-being, that is, being in a positive mood and satisfied with one's life, and eudaimonic well-being, that is, feeling purposefully engaged, vivid, and alive (Hahn, Frese, et al., 2012; Ryan & Deci, 2001; Ryff, 2019). In terms of hedonic well-being, studies find that, as a proximal consequence, detachment leads to low levels of negative affect and high levels of positive affect (Feuerhahn et al., 2014; Sonnentag, Mojza, et al., 2008) and, as a distal consequence, life satisfaction (Fritz, Yankelevich, et al., 2010;

Hahn & Dormann, 2013; T. Liu et al., 2019; Sonnentag & Fritz, 2007b)[8]. With regard to eudaimonic well-being, detachment is associated with vigor (Brummelhuis & Bakker, 2012b; Clinton et al., 2017), low levels of fatigue (Bennett et al., 2018; Sonnentag, Binnewies, & Mojza, 2008; no significant effect: Fritz, Sonnentag, et al., 2010), low levels of emotional exhaustion (Foucreault et al., 2018; Fritz, Yankelevich, et al., 2010; Sonnentag & Fritz, 2007b; Sonnentag, Kuttler, & Fritz, 2010), and low levels of ego depletion (Germeys & Gieter, 2018). In turn, low levels of detachment are associated with problematic attitudes towards work, such as higher job anxiety (Chen et al., 2017) and, indirectly via optimism, higher burnout (Ragsdale & Beehr, 2016).

Effects of detachment on well-being differ depending on the research model, that is, time between the measurements of variables and the level of analysis (e.g., within-person vs. between-person level) as well as the type of detachment. In terms of research model, studies measuring both detachment and affect at the same time find the expected positive influence on positive affect and negative impact on negative affect (Feuerhahn et al., 2014; Sonnentag, Mojza, et al., 2008), whereas studies assessing detachment and affect at different times (e.g., detachment measured in the evening, positive and negative affect measured in the morning; Sonnentag, Binnewies, & Mojza, 2008) find that detachment only influences negative affect (i.e., the higher the detachment, the lower the negative affect) but not positive affect (Hahn, Binnewies, & Haun, 2012; Sonnentag, Binnewies, & Mojza, 2008). In contrast, Fritz, Sonnentag, et al. (2010) find no effect of detachment (measured at the end of the weekend) on negative affective states (measured the Friday in the following week) and in terms of positive affect, detachment only positively affects serenity. Due to these mixed findings based on different research models, it remains unclear when exactly psychological detachment influences subsequent levels of positive and negative affect. Relationships between detachment and well-being also differ depending on the level of analysis: Detachment (operationalized as affective rumination)

[8] Contradictory, Y. Park and Fritz (2015) find a negative association of detachment and life satisfaction, which may be because relaxation strongly affects life satisfaction and thus may have statistically suppressed the effect of detachment on life satisfaction.

only mediates the effect of emotional demands on well-being at the within-person level but not at the between-person level[9] (Wach et al., 2021).

Together, these findings indicate that detachment seems to have specifically proximal consequences for well-being (Sonnentag et al., 2017). Regarding different types of detachment, Jonge et al. (2012) only find significant negative effects of emotional and physical detachment on emotional exhaustion but not of cognitive detachment on emotional exhaustion. This distinction, however, implies a different understanding of psychological detachment as a construct with multiple dimensions.

Work-home interface. By definition, detachment links work and home areas of individuals. As such, it is not surprising that scholars frequently examine the work-home interface as an outcome of detachment. Detachment is negatively related to self- and spouse-reported daily conflicts at home (Rodríguez-Muñoz et al., 2017) as well as work-home interference (Derks & Bakker, 2014), and positively to self- and spouse-reported relationship satisfaction (Rodríguez-Muñoz et al., 2017) as well as marital satisfaction (Germeys & Gieter, 2017). Similarly, Hauser et al. (2018) find that low levels of detachment (which the authors label as cognitive stress) increase work-life conflict and Zhou et al. (2020) find that detachment reduces time- and strain-based but not behavior-based work-family conflict. Detachment often acts as a mediator in relation to work-life balance: Detachment mediates the negative effects of workplace telepressure, which refers to "a preoccupation and urge to respond quickly to message-based communications" (Barber et al., 2019, p. 350), on work-life balance evaluations (i.e., work-life balance satisfaction, work-life balance effectiveness, low work-family conflict) (Barber et al., 2019) as well as the effect of organizational expectations for email monitoring on work-life balance (Belkin et al., 2020).

Work motivation. In terms of work motivation, empirical studies mostly find that detachment positively affects work engagement (e.g., Kühnel et al., 2009; Siltaloppi et al., 2009) which is important for job performance, as the literature argues theoretically

[9] The within-person level refers to fluctuations within persons (e.g., from day to day); the between-person level refers to differences between the mean values of different persons. Thus, the findings in this study mean that low levels of (daily) detachment only reduce the levels of (daily) affect within individuals. However, low (mean) levels of detachment do not influence the (mean) levels of affect.

(Bakker, 2014). However, Guo and Zhu (2019) find in a cross-sectional study with university teachers that psychological detachment leads to lower levels of work engagement, which, in turn, predicted lower levels of research performance. Detachment does not seem to influence employees' turnover intent (Singh et al., 2016). Fritz, Yankelevich, et al. (2010) find a curvilinear effect of detachment on proactive work behavior, with proactive work behavior being highest at medium levels of detachment.

Relationships of detachment with constructs referring to work motivation can vary depending on the domain. In a study among university faculty members, X. Wang et al. (2018) find a significantly negative associations of detachment with self-discrepant time allocation ("to allocate more time than preferred to work activities that demand fewer self-regulatory resources allocate less time than preferred to activities demanding greater self-regulatory resources", p. 1) for research and teaching but no significant association with the service domain. These findings show that effects of detachment differ depending on the type of professional activity: while research activities require more self-regulatory resources and are, thus, negatively affected by high detachment (i.e., low detachment, more self-discrepant time allocation), teaching activities require less self-regulatory resources and are, thus, positively related to detachment (i.e., low detachment, less self-discrepant time allocation) (X. Wang et al., 2018). This study shows the importance of examining different activities within one specific profession, in this case of being an academic. This may be of interest for entrepreneurship research because entrepreneurs might even have more autonomy compared to academics and can freely decide how they allocate their professional time (Mueller et al., 2012; Shir et al., 2019; Stephan et al., in press).

Work performance. Surprisingly little is known about the impact of detachment on performance. This might be for two reasons: either a direct effect of detachment on performance does not exist or third variables mediate the relationship. In terms of the direct effect, research finds negative effects of detachment on procrastination (DeArmond et al., 2014), research performance (Guo & Zhu, 2019), and, indirectly via job anxiety, low detachment is associated with counterproductive work behaviors (Chen et al., 2017). The relationship between detachment and performance is thus presumably more complex. In a study among administrative employees, Fritz, Yankelevich, et al. (2010) find a

curvilinear effect of detachment on task performance, with medium (i.e., Quintile 2) levels of detachment being associated with the highest levels of task performance. In terms of the indirect link, Binnewies et al. (2010) examine the effect of detachment during the weekend on weekly task performance over four consecutive weeks. They find that although detachment indirectly (via the state of being recovered) leads to higher work motivation (i.e., personal initiative, organizational citizenship behavior), it is not associated with task performance (Binnewies et al., 2010). In a similar pattern, detachment is indirectly negatively related to procrastination (partially via fatigue), such that low detachment increases fatigue levels which, in turn, is associated with procrastination (DeArmond et al., 2014).

2.3.4 Detachment as a contingency factor

In this section, I summarize findings of detachment as a contingency factor by highlighting the predominant research perspectives. Sonnentag and Fritz (2015) argue in their stressor-detachment model that detachment can moderate the negative impact of stressors on strain. Indeed, empirical evidence finds that detachment buffers the positive effect of workload on exhaustion (Sianoja et al., 2018), high levels of psychological detachment in the afternoon buffer the positive effect of difficulties in emotion regulation at work on negative affect at home among nurses (Blanco-Donoso et al., 2017), and high levels of detachment buffer the negative effects of job demands on psychosomatic complaints as well as on work engagement, such that job demands were only negatively related to psychosomatic complaints and work engagement when detachment was low (Sonnentag, Binnewies, & Mojza, 2010). However, other studies find no significant moderating effects of psychological detachment on the negative association of job demands and emotional exhaustion (Sonnentag, Binnewies, & Mojza, 2010), the positive association of working hours and emotional exhaustion (Lu & Chou, 2020), and the relationship of working hours and well-being (Taris et al., 2008). In sum, despite its theoretical reasoning, empirical research on the buffering role of detachment is mixed and susceptible to influences of the operationalization of well-being.

Interestingly, detachment is not always considered as functional in its role as a moderator: Tong et al. (2020) find that high detachment reinforces the positive effects of low

identification on cynicism and of cynicism on counterproductive work behaviors, according to the authors' reasoning, because psychological detachment increases the psychological distance to the individual's organization.

Jonge et al. (2012) find different moderating effects in relation to creativity depending on the type of detachment: Cognitive detachment attenuates the positive effect of cognitive resources on creativity, whereas emotional detachment emphasizes the positive effect of emotional resources on creativity. Niks et al. (2017), however, find no significant interaction effects of cognitive resources and cognitive detachment or emotional resources and emotional detachment on creativity; instead, they find that emotional demands in combination with high emotional detachment negatively affect creativity, while emotional demands in combination with low emotional detachment slightly positively affect creativity.

2.3.5 Theoretical perspectives in the detachment literature

Detachment has been examined in organizational behavior research primarily from a recovery lens. Three core theoretical perspectives from organizational behavior are very common in the detachment literature: *conservation of resources theory* (Hobfoll, 1989), *effort recovery theory* (Meijman & Mulder, 1998), and *stressor-detachment model* (Sonnentag & Fritz, 2015). Applied to detachment, all three theories view detachment as a coping strategy to enhance well-being by recovering from work-related stressors. Specifically, with the conservation of resources theory, Hobfoll (1989) assumes that individuals tend to preserve their resources when stressors deprive them of them. Psychological detachment may be the mechanism preserving individuals' resources. The effort recovery model states that high work demands lead to more effort, which leads to stress reactions. As long as individuals recover, these reactions are reversible; if individuals fail to recover, though, well-being is impaired, work demands and effort increase again, and strain reactions tend to come up more often (Meijman & Mulder, 1998). The stressor-detachment model consists of three components: (i) job stressors, (ii) strain reactions and well-being, and (iii) detachment. Following Sonnentag and Fritz (2015), detachment can be a mediating or moderating (buffering) variable in the relationship between stressors and strain. Beyond these three theories, researchers apply many other theoretical

perspectives in detachment literature. To illustrate their overall meaning, I categorized them into *emotion*, *environment*, *identity*, *motivation*, and *stress and recovery*. Table 4 displays these categories with exemplary theoretical perspectives.

Table 4. Categories of theoretical perspectives with examples

Category	Examples of theoretical perspective
Emotion	Affective events theory (Weiss & Cropanzano, 1996) Broaden-and-build theory (Fredrickson, 2001) Circumplex model of affect (Russell, 1980)
Environment	Spillover-crossover model (Bakker & Demerouti, 2013) Work-family conflict theory (Greenhaus & Beutell, 1985) Work-home-resources model (Brummelhuis & Bakker, 2012a)
Identity	Boundary theory (Ashforth et al., 2000)/ border theory (S. C. Clark, 2000) Role theory (Kahn et al., 1964) Self-regulation and ego depletion theory (Baumeister & Vohs, 2007)
Motivation	Model of episodic performance (Beal et al., 2005) Model of proactive motivation (Parker et al., 2010) Self-determination theory (Ryan & Deci, 2000)
Stress & recovery	Conservation of resources theory (Hobfoll, 1989) Effort recovery theory (Meijman & Mulder, 1998) Stressor-detachment model (Sonnentag & Fritz, 2015)

Emotion. Regarding the theoretical role of emotion for detachment, for instance, the broaden-and-build theory states that positive emotions broaden people's thoughts and minds which then build lasting personal resources (Fredrickson, 2001). Accordingly, everyday positive emotions can have a long-term positive impact beyond their immediate positive consequences for the individual, equipping individuals with resources for future situations (Fredrickson & Joiner, 2018). In this vein, detachment can serve as a proxy for the outcomes of positive events (Bono et al., 2013). Most authors do not apply the broaden-and-build theory to detachment directly but in the context of hypotheses referring to positive affect (Ragsdale et al., 2016; Rhee & Kim, 2016; van Hooff & Baas, 2013), in particular the potentially protecting characteristics of positive effect in the light of stressors (van Hooff & Baas, 2013). Michel et al. (2016) look at the negative impact of challenge and threat emotions before work on the four recovery experiences control, detachment, mastery, and relaxation. The authors argue with the broaden-and-build theory only for the impact of challenge emotions on control and mastery, but not on

detachment and relaxation, because they expect detachment and relaxation to be affected only by threat emotions, which are rather demanding than broadening and therefore require a different theoretical perspective (Michel et al., 2016).

In several articles, the theoretical reasoning stems from more than one theory. Arguing with broaden-and-build theory and the *cognitive activation theory of stress* (Ursin & Eriksen, 2004), Demerouti et al. (2012) examine the moderating effect of detachment on the positive relationship between flow at work (i.e., enjoyment, absorption, intrinsic motivation) and energy at home (i.e., vigor, low exhaustion): Detachment strengthens the relationship between only enjoyment as a component of flow and energy. Based on the broaden-and-build theory and *self-regulation theory* (Muraven & Baumeister, 2000), Hahn et al. (2011) argue that recovery experiences during non-work time help develop positive affect, which replenishes depleted resources. In general, the broaden-and-build theory is applied in the detachment literature only when hypotheses revolve around affect or emotion. This is similar with other emotion-focused theories, such as the *circumplex model of affect* (Russell, 1980) to differentiate between different dimensions of emotional states as outcomes of detachment (Hahn et al., 2014; Y.-R. Wang et al., 2019). An interesting approach for future examination in entrepreneurship would be to apply theoretical insights on entrepreneurial emotion (Cardon et al., 2012) to the detachment literature.

Environment. Theories regarding the environment are diverse. I identified social psychology theories such as the *need to belong theory* (Baumeister & Leary, 1995; applied in: Chen & Li, 2019; Pereira & Elfering, 2014 to explain social stressors) or *justice theory* (Cropanzano et al., 2001; applied in: Sonnentag & Lischetzke, 2018 to describe illegitimate tasks). However, most articles refer to the work-home interface such as the *theoretical model of work-family spillover* (Edwards & Rothbard, 2000) and the *work-home-resources model* (Brummelhuis & Bakker, 2012a). I focus on the latter for a deeper analysis. The work-home-resources model refers to demands, resources, and outcomes components both at work and at home. Work and home areas are connected via personal resources, such as self-efficacy. The model works in both directions – from work to home and vice versa – resulting in either conflict or enrichment. For instance, the authors propose that work demands diminish personal resources leading to negative consequences for the home domain (Brummelhuis & Bakker, 2012a). In contrast to other work-home

interface theories (e.g., *work-family conflict theory*: Greenhaus & Beutell, 1985), this model involves both positive and negative perspectives (enrichment, conflict) on how work and home are connected, which precludes one-sided normative considerations. Hauser et al. (2018), empirically, only find a significant effect from detachment on lower levels of work-life conflict but not from detachment on higher levels of work-life enrichment. Considering that entrepreneurs have a different attitude towards work than employees, the inclusion of both conflicts and resources could provide a profound theoretical basis. Approaches in entrepreneurship research exist, for instance, in studies on the interplay between entrepreneurial motivation and work-family considerations (Adkins et al., 2013; Jennings & McDougald, 2007; Murnieks, Klotz, & Shepherd, 2020).

Identity. An exemplary theoretical perspective referring to employees' identity is boundary theory. Boundary theory posits that work and nonwork roles can be either integrated or segmented (Allen et al., 2014; Ashforth et al., 2000; Nippert-Eng, 2008). High integration means that permeability from work to life and vice versa is high and boundaries are low; high segmentation means that work and life are rather segmented of one another with low permeability and high boundaries (Ashforth et al., 2000). Recent research suggests that this dichotomous categorization into work and non-work areas underestimates the complexity of different areas in which an individual is involved in their lives (Powell et al., 2019). Hahn and Dormann (2013) argue, for instance, that boundaries become more blurred with the frequent use of communication media and can impede psychological detachment. In the detachment literature, different perspectives on boundary theory are applied, being work-family boundary dynamics (Allen et al., 2014), micro roles and boundary crossing transitions (Ashforth et al., 2000), work-family borders (S. C. Clark, 2000), home and work boundaries (Nippert-Eng, 2008), and mechanisms between work and family, such as spillover dynamics from one domain to the other (Edwards & Rothbard, 2000).

Detachment, by definition, separates work and non-work roles and functions as a psychological boundary strategy (Allen et al., 2014). As such, when authors rely on boundary theory, they often examine the work-nonwork interface, such as work-home interference as an outcome of low detachment (Derks & Bakker, 2014) or marital satisfaction (Germeys & Gieter, 2017) as outcomes of detachment. In addition, employees' behavior

play a role, such as the use of smartphones for work (Derks, van Mierlo, & Schmitz, 2014) or extended work availability (Dettmers et al., 2016). Boundary theory primarily stems from considerations on employees. Entrepreneurs, however, tend to highly identify with their venture (Cardon et al., 2005), making work a central part of their identity (Stephan, 2018), and "[b]usiness and private spheres are inextricably intertwined in entrepreneurship" (Hatak & Zhou, 2021, p. 19). Considering their differences, an interesting starting point for entrepreneurship research could be to compare boundary management strategies – such as workplace, work schedule, responsibility – of entrepreneurs with employees and their effects on detachment. Starting points may be the literature on boundary permeability and perceived norms of segmentation of work and life (Capitano & Greenhaus, 2018; Derks, van Mierlo, & Schmitz, 2014; Y. Park et al., 2011).

Motivation. Detachment seems to be only peripherally connected with motivation-oriented theories. Self-determination theory (Ryan & Deci, 2000), for instance, suggests that motivation is a multi-faceted construct ranging on a continuum from intrinsic motivation, that is, "the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn" (Ryan & Deci, 2000, p. 70), to extrinsic motivation, which "refers to the performance of an activity in order to attain some separable outcome" (Ryan & Deci, 2000, p. 71), with consequences for, among others, well-being.

Most works applying this theory in the context of detachment combine it with recovery- or stress-related theories, such as the stressor-detachment model (see Cangiano et al., 2019) or the effort-recovery model (see Feuerhahn et al., 2014). Demerouti et al. (2012) combine self-determination theory with a resource depletion perspective and argue that working on intrinsically motivated tasks may help building resources, leading to higher levels of energy. Arguing with self-determination theory, Ohly and Latour (2014) suggest two types of motivation for work-related smartphone use after work: an autonomous motivation, which is intrinsic and identified, and a controlled one, which is external and introjected. They hypothesize that autonomous motivation for smartphone use would lead to higher detachment because they feel in control of voluntarily pursing work tasks; contrary, controlled motivation for smartphone use would lead to lower levels detachment because it would be associated with lower need satisfaction (Ohly & Latour, 2014).

Smit (2016) focuses on the detachment from both specific goals and from work in general. Based on his empirical results and self-determination theory, he discusses how the goals' extent of autonomy, competence, and relatedness may potentially affect the individuals' detachment from work goals differentially. He concludes that "employees' global sense of detachment may actually represent a complex aggregation of detachment from various sources" (Smit, 2016, p. 509). The idea of intrinsic motivation could be a promising approach to apply the detachment–well-being relationship to entrepreneurship research (e.g., Ryan & Deci, 2001; Wiklund et al., 2019): as such, the type of motivation, could be an antecedent for detachment depending on the entrepreneurial phase (see: Murnieks, Klotz, & Shepherd, 2020, for a review on entrepreneurial motivation).

Stress and recovery. In terms of stress and recovery theories, the literature has predominantly focused on the stressor-detachment model (Sonnentag & Fritz, 2015). The authors themselves describe their model as an "organizing framework" (Sonnentag & Fritz, 2015, p. 72) to provide a specific model surrounding detachment instead of broader recovery theories. As outlined above, they emphasize particularly the role of detachment as a mediating and moderating (buffering) variable in the stressor–strain relationship. For the mediating role of detachment, due to scarce and mixed empirical results the authors called for more research to test whether "[l]ack of psychological detachment is a partial mediator linking job stressors and strains" (Sonnentag & Fritz, 2015, p. 73). Empirical research following the publication of their article, in general, supports the role of detachment as a partial mediator: detachment mediates the negative effect of constant connectivity on employee well-being, via reduced levels of detachment (Büchler et al., 2020), the positive effect of job demands on job anxiety, via reduced levels of detachment (Chen et al., 2017), the negative effect of job stressors on well-being, via reduced levels of detachment (Schulz et al., 2019), and the negative effect of working hours on sleep quality, due to lower levels of detachment (Clinton et al., 2017). Reis and Prestele (2020), however, find no support for the *mediating* role of detachment in the relationship of job demands on strain because detachment does not predict strain. For the *moderating* role of detachment, the authors suggest looking at the interplay of social support and low detachment since talking about work may enhance well-being, thereby potentially reducing negative effects of stressors. Indeed, Schulz et al. (2019) find that high levels of social

support attenuates the indirect negative effect of job stressors on well-being via detachment.

Sonnentag and Fritz (2015) suggest five avenues for future research: first, to include the valence of work events (e.g., positive versus negative work events) where only detaching from the negative ones would be functional; second, to consider reverse causation, such that strains may also have an impact on detachment in the reversed direction; third, to examine boundary conditions in the form of moderators, temporal dynamics as well as what *low* detachment feels like and what cognitions accompany it; fourth, to include the organizational, technological, and social context; and fifth, to examine detachment during work breaks (Sonnentag & Fritz, 2015). Since 2015, many authors have followed their calls as shown in Table 5.

Table 5. Responses to calls for future research in Sonnentag & Fritz (2015)

Call	Articles since 2015
Valence	Occurrence of negative and positive information and communication technology events on detachment (Braukmann et al., 2018) Interaction of detachment and negative work rumination on insomnia (Demsky et al., 2019) Indirect effect of learning goal orientation via problem-solving rumination on detachment (Mehmood & Hamstra, 2021)
Reverse causality	Anxiety on detachment (Cangiano et al., 2019) Faked positive emotions and suppressed negative emotions on detachment (Gu et al., 2020) Negative affect on detachment (Sonnentag & Lischetzke, 2018) Test for alternative, reversed mediation model (Schulz et al., 2021) Threat emotions on detachment (Michel et al., 2016) Vigor on detachment (Blanco-Donoso et al., 2021)
Boundary conditions, temporal dynamics, cognitions, and emotions	*Boundary conditions*: e.g., mindfulness as buffering variable on relationship of detachment on well-being (Haun et al., 2018) *Cognitions & emotions*: detachment and negative/ positive affect (Haun et al., 2018; Ouyang et al., 2019; Sonnentag & Lischetzke, 2018; Y.-R. Wang et al., 2019); emotional and cognitive demands and detachment (Wach et al., 2021) *Temporal dynamics*: detachment as a predictor of change trajectories of fatigue (Hülsheger, 2016), detachment at different times after coaching intervention (Busch et al., 2021)
Context	*Organizational*: organizational expectations for email monitoring (Belkin et al., 2020), supervisor's support for recovery (Bennett et al., 2016)

Call	Articles since 2015
	Social: segmentation preferences (Büchler et al., 2020), spousal recovery support (Y. Park & Fritz, 2015)
	Technological: smartphones (e.g., van Laethem et al., 2018), emails (Belkin et al., 2020), social cyberloafing (Wu et al., 2020), mobile work (Jo & Lee, 2022)
Work breaks	Lunch breaks (Dreden & Binnewies, 2017; Rhee & Kim, 2016)
	Microbreaks (Conlin et al., 2021)
	Work breaks (Chong et al., 2020)

2.4 Avenues for future research

Based on my analysis and the findings in the reviewed articles, I now discuss three avenues for future research: boundaries of detachment (2.4.1), the role of the context in relation to detachment (2.4.2), and opportunities for entrepreneurship research (2.4.3).

2.4.1 Reconsidering the boundaries of detachment

The literature on psychological detachment appears to be narrowly focused to some extent as the literature views detachment particularly in a positive light due to its positive impact on well-being. I discuss three assumptions underlying the detachment literature in the following.

First, the construct definition of psychological detachment and the examined research models imply a fixed conception of work. Scholars conceptualize work as externally imposed, rather than something that can be meaningful (Nikolaev et al., 2019; Stephan et al., 2020; Williamson et al., 2021; Shir & Ryff, in press) and is important to an individual's self-concept (Haynie & Shepherd, 2011). Although first evidence suggests that meaningfulness of work is associated with lower levels of detachment (Zheng et al., 2020), the literature mostly assumes that employees work a determined number of hours each day and have free time in the evenings after work, during the weekend, and on vacation. This assumption disregards the fact that many employees, managers, executives, or self-employed work beyond their regular hours, for instance, by meeting business partners for dinner, answering emails on weekends, or completing slides at night.

Accordingly, future research could consider different conceptualizations of work time to examine whether they have an impact on how individuals detach from their work.

In addition, the detachment literature implicitly assumes that private and professional lives are rather separated. Many employees work from home, at least for a certain part of their working hours, which implies that the physical boundaries between work and home are blurring. For instance, parents interrupt their workday to pick up their children from daycare and continue working when the children are in bed; employees go for a run during their lunch breaks. Ohly and Latour (2014) find that smartphone use in the evening is even positively related to detachment but only the intensive use of smartphones for work is detrimental to detachment. This finding shows that it is not necessarily clear how people detach in more flexible as well as remote working arrangements (see Jo & Lee, 2022, for a study on mobile work). Future research may adopt a more nuanced perspective on work as a setting that gives individuals meaning beyond financial income (Nikolaev et al., 2019; Stephan et al., 2020; Williamson et al., 2021; Shir & Ryff, in press) to dismantle this pattern.

Second, future research should consider that consequences of detachment can also be negative. Looking at the high number of articles referring to the positive effect of detachment on well-being (see 2.3.3.2), leads to the impression of a public health perspective on detachment: due to its mostly positive effects on well-being, detachment has a generally positive reputation. However, as I outlined earlier, there is little empirical evidence (Fritz, Yankelevich, et al., 2010; Guo & Zhu, 2019) on the effect of detachment on performance. The low number of studies about performance may be because detachment and performance are only related indirectly (Guo & Zhu, 2019) or there is a publication bias because there is no effect at all (Binnewies et al., 2010). Future research may consider the potentially dark side of detachment or study the circumstances under which detachment has negative consequences. For instance, it may be promising to examine constructs that potentially require *low levels* of detachment, such as creativity, because many ideas emerge when individuals are simultaneously engaged in multiple tasks (Kapadia & Melwani, 2021), and not detached (Davis et al., 2013). High average levels of problem-solving pondering, conceptually similar to low detachment – but not high levels of daily problem-solving pondering – are indeed associated with higher levels of

daily creativity (Weinberger et al., 2018). In the entrepreneurship context, individual creativity can lead to entrepreneurial opportunity adaptation or pivoting (Grimes, 2018) and may be, thus, an interesting outcome variable for future research.

A promising approach for future research to integrate findings on positive and negative outcomes of detachment could be a dual pathway model in which low detachment would be detrimental for the individual's well-being but functional to performance-related outcomes. Following ego depletion theory (Baumeister & Vohs, 2007), personal resources may be depleted if individuals never detach. In the short run, though, not detaching may be functional to creativity up to a certain threshold until well-being is threatened (too much) (Stephan et al., in press). Another approach could be to investigate detachment as a "double-edged sword" with moderator variables that determine under which conditions low detachment is detrimental or even functional to performance outcomes. Presumably, this depends on the phase of work and the type of tasks, such that some work phases require long, intense, and uninterrupted thinking about work, maybe also beyond regular working time, while other phases require detachment to recover and recharge energy levels. To this point, we do not know sufficiently about the potentially negative consequences of detachment for creativity specifically, and broader performance outcomes more generally.

Third, in terms of boundaries, researchers may critically reflect upon the temporal order in which detachment occurs in relation to its antecedents and outcomes. As outlined above, some variables (e.g., negative affect, vigor) are examined as variables both preceding (i.e., antecedent) and following detachment (i.e., outcome). This shows that a clear order does not hold for some constructs. Since detachment is a construct with high intraindividual/ within-person variance (see 2.3.2), alternative research models and study designs that include immediate consequences should be considered. Recent methodological work recommends the consideration of temporal dynamics in within-person relationships, such as alternative shapes, for instance, spirals (Gabriel et al., 2019; McCormick et al., 2020) or growth curve analyses. Researchers should also be aware that the direction of causality needs an appropriate research model with relevant control variables and effects (Beal, 2015). In summary, future research may reconsider the fixed conception of

work, the exclusive focus on positive consequences of detachment, and the order in which detachment occurs in relation to related variables.

2.4.2 How does the context influence an individual's detachment?

The empirical detachment literature neglects the context in which detachment occurs. Although Sonnentag and Fritz (2015) have called for more research on the organizational, technological, and social context, research to date lacks insights on how particularly the social context influences individuals' detachment (see Table 3). First, samples are often too narrow. Specifically and as I outline in 2.3.2, most studies rely on convenience samples and disregard study participants with high workload. In addition, most samples consist of employees and neglect other occupation types like self-employment or entrepreneurship. Furthermore, the detachment literature often refers to findings on samples requiring lower levels of creativity in their daily work practice (e.g., nurses: Blanco-Donoso et al., 2017, or police officers: T. Liu et al., 2019). It would be, thus, interesting to see how findings hold up when being tested among different professions that typically require high levels of creativity like entrepreneurs (Murnieks, Arthurs, et al., 2020; Weinberger et al., 2018). Sonnentag et al. (2017) propose to test existing findings on entrepreneurs because they are exposed to high workload, weak boundaries between work and private life, and do not specifically have clearly defined non-work time. Indeed, Wach et al. (2021) find evidence for the positive impact of detachment on well-being among entrepreneurs. Beyond diversifying the samples, future research may examine the influence of different working modes, such as flexibility of work locations and time, on detachment and its related constructs. Further, the type of occupation (e.g., employed vs. self-employed), the type of profession (e.g., job requiring high level of creativity vs. job requiring low level of creativity), or the industry (e.g., hostile vs. not hostile) could also be connected with detachment. Researchers should try to avoid issues with a systematically low variance along certain criteria or when a sample does not cover extreme levels.

Second, in terms of context, detachment research neglects the influence of social dynamics at work on detachment. Research on the impact of the partner (Hahn et al., 2014; Hahn & Dormann, 2013) as well as the supervisor (Bennett et al., 2016) shows that the

social perspective is important for detachment. However, only two studies also include aspects of the team (co-worker reported performance as an outcome variable: Fritz, Yankelevich, et al., 2010; co-worker reported workplace aggression as an independent variable: Demsky et al., 2014). Thus, to what extent team members at the same hierarchy level and internal team dynamics affect detachment have been rather neglected.

However, the team may be important for detachment for two reasons: Directly, co-workers can take over tasks and contribute to reducing an individual's workload, which seems to be important for better understanding the idea that unfinished tasks at work lead to more rumination at home (Syrek & Antoni, 2014). Indirectly, co-workers can provide emotional closeness, create a certain atmosphere, which can be beneficial or detrimental to detachment, and they can become friends. Friendship within a team can create a climate of joviality and companionate love that also affects behavior outside work (O'Neill & Rothbard, 2017), such that it may act as a buffer against stressors and, thus, lead to higher detachment. However, friendship usually implies the expectation that friends support each other (Pillemer & Rothbard, 2018), which makes it less likely that individuals refuse tasks when friends ask them for help. As such, Sonnentag et al. (2017, p. 374) suggest to study the effects of "informal meetings and joint activities with co-workers" after work. How (much) co-workers detach may affect an individual's detachment because it contributes to the general recovery climate and the perceived norms which are associated with detachment (Y. Park et al., 2011). How the team level is operationalized is not trivial: Researchers can use the average of other team members' detachment, or they can utilize the dispersion of detachment within the team captured by the standard deviation of detachment within the team.[10]

Entrepreneurial teams differ from established corporate teams as they are formed based on self-selection (Lazar et al., 2020), are usually smaller, and many co-founders are friends. As such, by looking at entrepreneurial teams, researchers could examine the

[10] The referenced section on the team level includes information from the Master thesis "Psychological Detachment in Entrepreneurial Teams" by Caroline Bach which I supervised. The thesis was submitted at Technical University of Munich on November 15, 2020.

consequences of low levels of detachment in teams or even entire organizations and examine the impact of friendship within teams or coping among co-founders (Bodenmann, 1997).

A third opportunity to incorporate the context into detachment literature is to establish new ways of operationalization and research designs. A first step could be to enrich survey data with other data types, which has been done in mixed-methods studies (Braukmann et al., 2018; Loveday et al., 2018). Possible data sources could be, for instance, interviews, semi-structured diaries including both quantitative scales and qualitative open formats, or secondary data like digital traces of work devices (e.g., time stamps of work smartphones), instead of letting participants self-report their time spent on emails and devices (Belkin et al., 2020; H. Liu et al., 2021) or filling in questionnaires about communication technology (Büchler et al., 2020; van Laethem et al., 2018). Sometimes, smartphone use is only measured in its average levels (e.g., Derks & Bakker, 2014; Ohly & Latour, 2014; Y. Park et al., 2011), neglecting potential fluctuations within individuals. Including such data would capture the behavioral part of detachment and therefore draw a more holistic picture of detachment. Following few prior studies (Pereira & Elfering, 2014; Wach et al., 2021), research models may also rely on technological devices to measure constructs related to detachment to reduce the susceptibility of self-reported data. In addition, researchers could add (neuro-) physiological proxies and biomarkers (Nicolaou et al., 2021; Stephan et al., in press) that are measured, for instance, with cardiovascular measures (Sonnentag & Geurts, 2009). In sum, to incorporate the context into detachment literature, future researchers may refer to broader samples, include the team or even organizational level, and consider the inclusion of alternative data sources.

2.4.3 How can entrepreneurship research benefit from detachment literature?

In the first two discussion points (2.4.1 and 2.4.2) I identified gaps in the detachment literature and showed how research among entrepreneurs can advance this literature stream. In this last section, I switch perspective and outline how entrepreneurship research can learn from the detachment literature. And, on the other side, how the detachment literature can be informed by research in the field of entrepreneurship. Compared

to employees, entrepreneurs specifically experience high level of passion for their product or service (Cardon et al., 2009) and a strong commitment to their ventures (D. A. Shepherd et al., 2011), which is why prior research refers to the venture as the entrepreneurs' baby (Cardon et al., 2005). Entrepreneurs are exposed to high levels of work demands because they face high levels of uncertainty (Townsend et al., 2018) in the short (e.g., frequent changes of positive and negative events) and long run (e.g., failure of venture), have few resources at hand (Plummer et al., 2016), work long hours (Stephan & Roesler, 2010; Williamson et al., 2021), and are responsible for employees and the survival of their venture (Cardon & Patel, 2015).

Building on these differences, I identify three starting points for future research. First, future research may work on a construct definition of entrepreneurs' non-work time and, specifically, their capabilities to detach from their work. Unlike employees, entrepreneurs usually do not have contracts that regulate their working hours or their free time like vacations. Their working hours are rather determined by important stakeholders, such as clients or investors, such that working nights, weekends, and long phases with no vacation, are quite common among entrepreneurs. I, thus, propose the following research questions to be explored in future research:

> ***Future Research Question 1**: **(a)** Do entrepreneurs psychologically detach from the work in their ventures? **(b)** How do entrepreneurs conceptualize and manage their non-work time?*

Since these research questions describe a lack of theory, the use of inductive methodology and qualitative research seems reasonable (Gehman et al., 2018). For instance, conducting interviews with entrepreneurs may capture data on rather open questions (e.g., "What does non-work time mean to you?") as well as more specific ones (e.g., "What do you do to switch off?"). In addition, secondary data, such as the entrepreneurs' calendars to track their work and non-work routines, can be considered. Examining these research questions would contribute to a construct definition of entrepreneurs' non-work time (D. A. Shepherd & Haynie, 2009). Beyond the individual entrepreneur, future research may consider the team-level perspective, which is why I propose the following two research questions:

> ***Future Research Question 2**: **(a)** Do founding teams have internal regulations regarding their non-work time, such as for overtime or vacation? **(b)** What are the consequences if the entrepreneurial team members' levels of psychological detachment differ?*

Addressing these research questions will provide insights into how entrepreneurs deal with the special situation of not having formal supervisors but stakeholders in the form of clients and investors that affect their work routines (Mitchell et al., 2021). Norms related to recovery may differ from those of employees in that entrepreneurs experience mixed feelings when they detach. They may interpret detachment as a certain degree of psychological disengagement from the venture, that is, the "process of both cognitively and emotionally withdrawing from the organization" (Rouse, 2016, p. 1605) or they may feel a social obligation to their co-founders or employees to always keep their heads down with work. For all those reasons, I assume that a conceptual work on entrepreneurs' non-work time and detachment behavior would be a promising future avenue. This would also follow the call of entrepreneurship researchers to address the growing interest in entrepreneurial well-being (Ryff, 2019; Wiklund et al., 2019; Stephan et al., in press).

Another opportunity for future entrepreneurship research would be to consider detachment as an independent variable. While strong commitment to the venture (similar to low detachment) contributes to venture success (Uhlaner et al., 2007), low detachment compromises well-being (Wach et al., 2021). Thus, detachment among entrepreneurs may be positive for the individual's well-being but detrimental for the venture. To what extent and under which conditions detachment and performance-related outcomes are related, could be uncovered by the analyses of contingency variables at different levels: at the venture-level, for instance, the entrepreneurial stage (e.g., funding round), or the financial situation; at the team-level, for instance, the team size or the number of employees; and at the individual level, for instance, entrepreneurial experience (see Kollmann et al., 2019). Building on my reasoning in the first discussion point (2.4.1), I suggest another research question for future studies on the role of detachment for entrepreneurs:

> ***Future Research Question 3**: To what extent does an entrepreneur's detachment level affect venture **(a)** growth (intentions) and **(b)** exit (intentions)?*

In their qualitative paper on role transitions and venture growth, Mathias and Williams (2018) quote entrepreneurs who indicated "intentions not to grow" (p. 275) – in partial, because they wanted to maintain a work-life balance – but still had ventures with high actual growth. Picking up this intriguing finding, future research may look at the relation of detachment and venture growth, including both the intentions or motivation (Murnieks, Klotz, & Shepherd, 2020) and data on actual growth. Moreover, given the growing scholarly interest in the impact of well-being on exit intentions or decisions (Hessels et al., 2018; Sardeshmukh et al., 2021), future research may also consider entrepreneurs' personal career goals as potentially interesting outcomes of varying levels of detachment.

A third avenue for future research of entrepreneurship integrating detachment literature could be the examination of detachment as a dependent variable. A recent study by Wach et al. (2021) find that both cognitive and emotional demands lead to higher levels of problem-solving pondering and affective rumination among entrepreneurs. The pressure to be constantly creative and innovative causes pressures that may impede detachment (Weinberger et al., 2018). At a personal level, entrepreneurs usually highly identify with their work and regard it as central for their self-concept (Hoang & Gimeno, 2010; Murnieks & Mosakowski, 2007; Stephan, 2018). This high level of identification is associated with a tendency toward integration, which makes switching between different roles more likely while exiting a role, for instance, temporarily exiting a work role during activities in private life, is more difficult (Ashforth et al., 2000). Accordingly, boundaries between work and private life are rather weak which, for instance, becomes visible when co-founders are friends outside their work in the venture. While these characteristics can vary between entrepreneurs, they may be interesting moderator variables when looking at antecedents of entrepreneurial detachment.

The emotional rollercoaster that entrepreneurs ride in the first years of their business involves "peaks and valleys alternating between high pressure, stress, and uncertainty, and relative calm and early accomplishments" (Cock et al., 2020, p. 1). In the tradition of the detachment literature where stressors are associated with lower levels of detachment, a focus on the negative peaks may be an interesting starting point given that entrepreneurs often face setbacks (van Gelderen et al., 2011), which is why I suggest the following research question:

Future Research Question 4*: To what extent do venture-related* ***(a)*** *setbacks and* ***(b)*** *successes affect entrepreneurs' subsequent psychological detachment?*

The following chapter addresses the future research question 4a in that it examines to what extent and when entrepreneurial setbacks affect entrepreneurs' psychological detachment from work. In sum, I outlined three potential starting points for entrepreneurship research: a qualitative and conceptual approach to investigate entrepreneurs' detachment, detachment as an independent variable, and as a dependent variable.

3 When do entrepreneurial setbacks affect psychological detachment? The contingency role of effort [11] [12]

3.1 Introduction

Entrepreneurs repeatedly experience setbacks in the course of their entrepreneurial journey (Rauter et al., 2018; van Gelderen et al., 2011). Entrepreneurial setbacks constitute common events that entrepreneurs perceive negatively and that jeopardize goal progress (Funken et al., 2020; Rauter et al., 2018; Uy et al., 2021; van Gelderen et al., 2011). Such setbacks can occur in relation to both internal stakeholders (internal setbacks such as conflicts between founders or founders and employees) and external stakeholders (external setbacks such as a drop in customer demand and setbacks in negotiations with an important partner) (Laplume et al., 2008). Entrepreneurial setbacks have been associated with negative outcomes, such as limited progress of the venture (van Gelderen et al., 2011), but they can also initiate learning processes (Funken et al., 2020; Rauter et al., 2018), which may positively affect venture development (Funken et al., 2020). Although previous research has started to explore the psychological consequences of setbacks, pointing, for instance, to the impact of setbacks on fear of failure (Engel et al., 2021; Kollmann et al., 2017), it has not addressed how setbacks shape entrepreneurs' well-being. This is surprising as well-being is not only an important psychological resource for the entrepreneur but also affects their entrepreneurial actions (Foo, 2011; Ryff, 2019; D. A. Shepherd & Patzelt, 2015) as well as their venture's performance (Stephan, 2018) and has increasingly gained interest over the past years (Shir et al., 2019; Stephan, 2018; Wiklund et al., 2019; Stephan et al., in press).

[11] Most parts of this chapter are co-authored by Prof. Dr. Nicola Breugst, Prof. Dr. Mirjam Knockaert, and Prof. Dr. Dr. Holger Patzelt. They advised me regarding the data collection as well as the theoretical model and reviewed the manuscript. The data have been collected with the help of Dr. Max Haase, Dr. Aishwarya Kakatkar, and Dr. Friedrich Tacke. The weekly data representing the core of this study (that is, data on setbacks, effort, and detachment) are exclusively used in this study. However, the data collection effort also consisted of a longer questionnaire at the beginning and the end of the study period and data from these questionnaires have been used in a paper by Tacke et al. (in press). Importantly, this paper does not overlap with respect to independent, moderating, and dependent variables with this chapter.

[12] This manuscript has been accepted – in previous versions – for presentation at Babson College Entrepreneurship Research Conference (BCERC), 2020 (Knoxville, USA) and was published in the Frontiers of Entrepreneurship Research (BCERC, 2020).

An important antecedent of entrepreneurs' well-being is their psychological detachment (Sonnentag, Binnewies, & Mojza, 2010; Wach et al., 2021), which refers to mentally switching off from work during non-work time (Etzion et al., 1998). Research has shown that psychological detachment is beneficial to individuals' health, work motivation, work performance (Wendsche & Lohmann-Haislah, 2017), vigor (Brummelhuis & Bakker, 2012b; Clinton et al., 2017), positive affect (Y.-R. Wang et al., 2019), and sleep (Clinton et al., 2017; Liu et al., 2021), and thus their well-being in the long run (Sonnentag, Binnewies, & Mojza, 2010; Thiele Schwarz, 2011). The few studies that have studied psychological detachment among entrepreneurs confirm its importance for well-being (Taris et al., 2008; Wach et al., 2021). However, despite this importance of psychological detachment for entrepreneurs and their frequent experience of setbacks, it is unclear how detachment is shaped by entrepreneurial setbacks. Therefore, our study sets out to provide an understanding of whether and when setbacks affect detachment.

To better understand the relationship between entrepreneurial setbacks and psychological detachment, we draw on the stressor-detachment model (Sonnentag & Fritz, 2015) and on attribution theory (Weiner, 1985). Because entrepreneurs need to address entrepreneurial setbacks under high uncertainty (McMullen & Shepherd, 2006), with few resources to fall back on (Plummer et al., 2016), and with the threat of failure if they make the wrong decisions (D. A. Shepherd et al., 2011; D. A. Shepherd, Patzelt, & Berry, 2019), we expect both internal and external setbacks to represent work stressors for entrepreneurs (Sonnentag & Frese, 2012; Uy et al., 2021) that potentially impede psychological detachment. Building on attribution theory (Douglas et al., 2008; Harvey et al., 2014; Weiner, 1985), we further theorize that the effect of setbacks on detachment is contingent on the level of effort an entrepreneur invests in their venture; however, these moderating effects differ between internal versus external setbacks. We test our theoretical model building on longitudinal data from 2,318 questionnaires of 257 entrepreneurs over twelve weeks.

Our main contributions to the literature are threefold. First, we advance research on entrepreneurial setbacks by complementing studies that have addressed the impact of setbacks on learning (Funken et al., 2020; Petkova, 2009; Rauter et al., 2018), fear of failure (Engel et al., 2021; Kollmann et al., 2017), passion (Uy et al., 2021), and team resilience

(Stoverink et al., 2020). Consistent with the stressor-detachment model, we show that internal setbacks act as work stressors that compromise entrepreneurs' detachment, but, interestingly, we do not find such an effect for external setbacks. This indicates a need to differentiate between different setback types for theorizing about the psychological consequences of setbacks for entrepreneurs.

Second, we add to literature on entrepreneurial well-being (Stephan, 2018; Wach et al., 2021; Wiklund et al., 2019) by revealing boundaries of the stressor-detachment model in the entrepreneurship context. In particular, we find that the effort invested by the entrepreneur has a differential role depending on the type of setback: low effort strengthens the negative effect of internal setbacks on detachment whereas for external setbacks, high effort strengthens the negative effect on detachment. Thus, our study points to the importance of attribution for understanding entrepreneurs' detachment from work and the applicability of the stressor-detachment model for this context.

Finally, we add to literature on entrepreneurial effort (e.g., Breugst et al., 2020; Gielnik et al., 2015; Laffineur et al., 2020) by challenging the predominantly positive view on entrepreneurial effort. In particular, we identify a potential downside of effort for entrepreneurial well-being. This downside is consistent with prior research in organizational behavior focusing on dependent employment, which both theoretically (Bennett et al., 2018; Meijman & Mulder, 1998) and empirically suggests that effort impedes individuals' recovery from work and thus their well-being (Meier & Cho, 2019; Sonnentag & Kruel, 2006; Sonnentag, Kuttler, & Fritz, 2010). Thus, we advocate for a more nuanced view on entrepreneurial effort that balances potential upsides with its potential downsides for entrepreneurs, by extension, the development of their ventures.

3.2 Theoretical background

3.2.1 Internal and external setbacks

Setbacks arise frequently throughout the entrepreneurship process (e.g., Funken et al., 2020; Rauter et al., 2018; Uy et al., 2021). In general, entrepreneurs perceive setbacks as a negative deviation from their own expectations and goals (Rauter et al., 2018; van

Gelderen et al., 2011). Setbacks may have important implications for entrepreneurs because they induce adversity (Rauter et al., 2018; Stoverink et al., 2020; Uy et al., 2021), can jeopardize goal progress (Funken et al., 2020), and can, in the long run, diminish venture success (Funken et al., 2020; Uy et al., 2021), even leading to venture failure (D. A. Shepherd et al., 2011; D. A. Shepherd, Patzelt, & Berry, 2019).

Entrepreneurs can be confronted with different types of setbacks. Given that entrepreneurship is a social activity (Dimov, 2007) and entrepreneurs need the support of numerous stakeholders (Mitchell et al., 2021; Obstfeld et al., 2020), adopting a stakeholder perspective (Laplume et al., 2008) is a meaningful approach to categorize setbacks. Specifically, stakeholder groups can be either internal (i.e., entrepreneurs themselves, cofounders, employees) or external to the venture (i.e., business contacts, customers, investors) (Crifo et al., 2019; Fanelli & Misangyi, 2006; Hoffmann et al., 2011). We refer to difficulties that entrepreneurs experience with their internal stakeholders as *internal setbacks*. Such internal setbacks (Uy et al., 2021) can refer to difficulties in team performance (Rauter et al., 2018) or interpersonal processes (Stoverink et al., 2020), such as conflicts between founders or founders and employees. We refer to difficulties that entrepreneurs experience in building or maintaining relationships with their external stakeholders as *external setbacks*. Such external setbacks can refer to "exogenous loss-related obstacles" (Kollmann et al., 2017, p. 284), such as a drop in customer demand (Kollmann et al., 2017), or failed attempts to interact with external stakeholders, such as setbacks in negotiations with an important partner.

Since entrepreneurs feel responsible for the future of their venture (Cardon & Patel, 2015; Markman et al., 2005), they need to find solutions for these two types of setbacks, for instance, by improving coordination processes or reacting when a customer cancels their contract. Finding solutions is particularly challenging because entrepreneurs may have few resources at hand (Plummer et al., 2016) and work under high levels of uncertainty (McMullen & Shepherd, 2006). All these pressures resulting from setbacks constitute a situation that evokes strain (Sonnentag & Frese, 2012; Sonnentag & Fritz, 2015), which is why both internal and external setbacks are often substantial work stressors for entrepreneurs (Uy et al., 2021).

3.2.2 The stressor-detachment model

In their stressor-detachment model, Sonnentag and Fritz (2015) theorize that work stressors reduce psychological detachment from work, that is, mentally switching off from work-related matters during non-work time (Etzion et al., 1998). Psychological detachment means that individuals both do not *involve* in work behaviors and at the same time do not *think* about work during non-work time (Sonnentag & Fritz, 2007b, 2015). Work stressors make it more difficult for individuals to detach because they cause an immediate stress reaction with a negative affective and physiological activation (Sonnentag & Fritz, 2015). Specifically, when confronted with work stressors, individuals tend to keep thinking about work in order to come up with solutions to these stressors and they tend to "anticipate problems and constraints" (Sonnentag & Fritz, 2007, p. 207).

Importantly, in the context of entrepreneurship, psychological detachment does not mean that entrepreneurs disengage (Rouse, 2016) or distance themselves from their venture (Rose et al., 2021); it rather means that individuals switch off from work in their *non-work time*. Applying the stressor-detachment model to the entrepreneurial context, we assume that setbacks represent important work stressors for entrepreneurs, which will hinder their detachment from work. Specifically, after experiencing a setback, entrepreneurs may, even during non-work time, still ruminate why the setback happened, what they could have done differently (Yamakawa et al., 2015), and how they can resolve the situation (Kim & Kim, 2020; Weinberger et al., 2018). Following *internal setbacks*, entrepreneurs thus might think how they could have avoided the issues in their team or with their employees. Further, they are likely to reflect on how to improve their internal processes and better coordinate with team members and employees. Following *external setbacks,* entrepreneurs will analyze the situation leading to the setback and may think about possible solutions to change their relationships with external stakeholders, for instance, by targeting new customers or changing their negotiation strategy. Thus, while the contents of internal setbacks and external setbacks differ, the stressor-detachment model leads us to assume that both internal and external setbacks reduce entrepreneurs' detachment from work.

***Hypothesis 1a**: Internal setbacks are negatively related to entrepreneurs' subsequent level of psychological detachment.*

***Hypothesis 1b**: External setbacks are negatively related to entrepreneurs' subsequent level of psychological detachment.*

3.2.3 The role of effort for internal and external setbacks

For decades, scholars have tried to understand how individuals make sense of events by exploring the perceived causes of their occurrence – a cognitive process described by attribution theory (e.g., Martinko et al., 2011; Weiner, 1985). Individuals particularly tend to search for an explanation of events when an event was unexpected, negative (Weiner, 1985), and personally relevant to them (Douglas et al., 2008; Harvey et al., 2014). Given that entrepreneurs perceive setbacks as negative events that threaten the progress of their venture, which is personally highly relevant to them, they are likely to search for the causes of the setbacks' occurrence and therefore engage in attribution processes.

In particular, entrepreneurs are likely to ask themselves if the setbacks were controllable by their own behavior (i.e., perceived controllability), and if they had assumed sufficient responsibility for the venture (i.e., feelings of responsibility) when the setback occurred (Weiner, 1985). While controllability refers to the causal characteristics of a negative event, responsibility refers to the volitional behavior of the actor during this negative event (Weiner, 1995), such as the lack of effort (Weiner, 1985). The attributions individuals form after an event influence their emotional, cognitive, and motivational reactions to these events (Douglas et al., 2008; Weiner, 1985), which is why attributions are likely to shape individuals' well-being when confronted with negative events (D. A. Shepherd & Haynie, 2011).

Specifically, entrepreneurs are more likely to perceive the causes of internal setbacks as controllable by their own behavior as they work closely and in a highly interdependent way with their internal stakeholders, such as the founding team (Lazar et al., 2020). Because of these close connections, they are aware that their own actions shape the collaboration with the internal stakeholders. For example, they can contribute to an efficient

information processing and a conflict-free work atmosphere (Breugst & Shepherd, 2017; Rauter et al., 2018; Uy et al., 2021). If internal setbacks occur despite their controllability, entrepreneurs are likely to engage in rumination and, as we have argued above, will be less likely to detach from their work. However, following attribution theory, entrepreneurs' reactions are also contingent on their feelings of responsibility (Lyubykh et al., 2022; Weiner, 1995; J. Lee et al., in press). Concretely, the reactions that entrepreneurs experience in response to a setback are contingent on the extent to which they have assumed responsibility for their venture, which is reflected by the effort they invest in their venture (Breugst et al., 2020; Foo et al., 2009; Uy et al., 2015).

Specifically, if entrepreneurs feel that they have not taken a high level of responsibility for the venture, that is, if they have invested little effort, internal setbacks may have a particularly negative impact on their detachment. Particularly, having invested little effort, entrepreneurs will reflect on their own behavior and likely blame themselves for not taking responsibility for the venture, even though the difficulties involving internal stakeholders were likely controllable for them (Harvey et al., 2014; Martinko et al., 2011; Weiner, 1985, 1993). Because they feel personally responsible for the situation in the venture, they may experience negative psychological and emotional reactions to the internal setbacks (Bohns & Flynn, 2013; Weiner, 1985). Consequently, entrepreneurs will ruminate more about internal setbacks when they have invested rather low levels of effort. Therefore, we assume that internal setbacks more negatively affect entrepreneurs' psychological detachment when entrepreneurs have invested lower levels of effort. Conversely, these ruminative thoughts can be alleviated if entrepreneurs have invested high levels of effort because they develop the feeling that they have done everything in their power to avoid or tackle the setback. Particularly, we argue that effort will alleviate the impact of internal setbacks on detachment.

> ***Hypothesis 2a:*** *Effort moderates the relationship between internal setbacks and the subsequent level of psychological detachment, such that the relationship is less negative when the entrepreneur invests higher rather than lower effort.*

In contrast, we expect entrepreneurs to perceive the occurrence of external setbacks as less controllable (Eggers & Song, 2015; Fang He et al., 2018) because external stakeholders, such as investors and customers, are usually involved in various projects and are

likely to have different interests than the entrepreneur (Ramoglou et al., in press). If entrepreneurs experience these less controllable setbacks and have spent high levels of effort, they might consider their effort to be futile because this investment did not help them to avoid or tackle the external setbacks. This experience is likely to trigger negative psychological reactions because the entrepreneurs have assumed responsibility for the venture that did not pay off (Martinko & Gardner, 1982; Weiner, 1985). Indeed, individuals who experience that their effort is futile may learn that they are helpless in the face of setbacks as a consequence (Abramson et al., 1978; Campbell & Martinko, 1998; Harvey & Martinko, 2009; Maier & Seligman, 1976) and experience that their actions do not lead to the expected outcomes (Soral et al., 2021). These reactions in case of high effort are likely to trigger the entrepreneurs' rumination about the external setbacks (Martinko & Gardner, 1982). Therefore, we assume that external setbacks become more harmful to psychological detachment when entrepreneurs invested high effort. Conversely, low effort makes external setbacks less relevant to psychological detachment because the situation was less controllable by the entrepreneur's behavior, and they did not take as much responsibility. Thus, they can attribute the setback to conditions that were beyond their control and did not happen under their responsibility (J. Lee et al., in press), which is likely to reduce rumination about the setback (Z. Xu & Guo, 2019; Yamakawa et al., 2015). By consequence, we hypothesize that under higher levels of effort, external setbacks are more likely to reduce psychological detachment, while under lower levels of effort, external setbacks are less likely to reduce psychological detachment.

> ***Hypothesis 2b:*** *Effort moderates the relationship between external setbacks and the subsequent level of psychological detachment, such that the relationship is more negative when the entrepreneur invests higher rather than lower effort.*

3.3 Method

We collected data in an extensive study together with three doctoral students from the from the Entrepreneurship Research Institute of Technical University of Munich, Dr. Max Haase, Dr. Aishwarya Kakatkar, and Dr. Friedrich Tacke, as well as the two professors Prof. Dr. Nicola Breugst and Prof. Dr. Dr. Holger Patzelt. Following previous data collection endeavors at our Institute and because we wanted to capture characteristics and dynamics of entrepreneurial teams (Klotz et al., 2014; Lazar et al., 2020; Patzelt

et al., 2021), we named our study BEST (i.e., acronym for Building Entrepreneurial Success Teams). The BEST study comprised three stages for our participants: (i) one round of interviews, (ii) a week-level questionnaire series, and (iii) a second round of interviews. While the interviews were helpful to gain practical knowledge on entrepreneurship and to build a relationship with participants, this study specifically focuses on the week-level questionnaire series. Two years after the initial data collection (i.e., October 2021), we collected information on whether (i) participants left their venture and (ii) whether their venture failed[13]. Dr. Max Haase's (Haase, 2020) and Dr. Friedrich Tacke's dissertations (Tacke, 2021) give detailed descriptions of the procedure in the BEST study.

3.3.1 Study design

We applied a week-level longitudinal design, similar to the ones applied in Gielnik et al. (2015) and Breugst et al. (2020), because we wanted to capture fluctuations of internal and external setbacks, effort, and psychological detachment within entrepreneurs and to be able to relate setbacks to the entrepreneur's subsequent psychological detachment from work. Longitudinal research has the advantage over other survey designs in that it allows to study the variance within a person, that is, changes that occur within one individual or, more technically speaking, deviations of individual mean values (McCormick et al., 2020; Ployhart & Vandenberg, 2010). Longitudinal studies are considered particularly useful for the analysis of well-being dynamics (Stephan, 2018; Stephan et al., in press). Participants completed 12[14] weekly questionnaires measuring both the independent and the dependent variable(s). These rather short time periods between measurements were necessary because psychological detachment can fluctuate within individuals (e.g., Derks & Bakker, 2014; Meier et al., 2016) and we wanted to measure detachment at the end of a "working period" (Binnewies et al., 2010, p. 420), capturing the entrepreneurs' "week-to-week thinking" about their venture (Leonard & Swap, 2000, p. 81).

[13] These data were collected in the frame of two Bachelor theses (Kristin Reiss, Robert Sladeczek) at Technical University of Munich under my supervision.
[14] We applied this study duration drawing on McCormick et al. (2020) who find that 11 or more measurements revealed the highest within-person variance compared to less than 5 or 6-10 measurements.

Furthermore, a weekly interval is considered as a relevant time frame for assessing changes in detachment (Sonnentag & Fritz, 2015). In addition, we asked participants to what extent they had experienced events that could have a detrimental impact on their venture's progress (i.e., setbacks) over the past week. Here again, we consider weekly intervals as appropriate as these events frequently occur on a weekly level (Funken et al., 2020) and have been considered "a suitable time frame to give the entrepreneurs sufficient time to develop their business" (Gielnik et al., 2015, p. 1015).

3.3.2 Data collection procedures

We collected the initial data from January to October 2019. We approached entrepreneurs who were listed in German startup databases (i.e., "Bayern Startup Magazin", "Crunchbase", "deutsche startups", "Gründerszene"), entrepreneurs we had met at startup events and through incubator or accelerator contacts, and entrepreneurs from our personal networks. We relied on several sampling criteria. First, since we were interested in entrepreneurial founding teams (as next to external setbacks, we also focused on understanding the impact of internal setbacks [i.e., difficulties with internal stakeholders, which are more relevant in teams than in solo entrepreneurs]), we only included ventures with at least two entrepreneurial founding team members. All individuals who met at least two criteria of (i) declared themselves a founder of the company, (ii) held a relevant equity share (i.e., at least 10%) of the company and/ or (iii) were actively involved in strategic decision making (Lazar et al., 2020) were considered as members of the entrepreneurial founding team (Ensley et al., 2002). Second, we only included firms that were still active and six years old or younger as these firms are typically considered new ventures (Amason et al., 2006). Ventures that were not formally incorporated yet were also included if the profound intention existed to found the company within the upcoming six months. Third, we excluded corporate spin-off companies because they could build on resources of their parent organizations (Parhankangas & Arenius, 2003) and may therefore be differently affected by setbacks. Based on these criteria, we contacted 574 new ventures personally via email or phone and informed them via email about the purpose and design of our study as well as incentives for participation, which we had selected based on the results of a pre-study poll on the attractiveness of study incentives among nascent

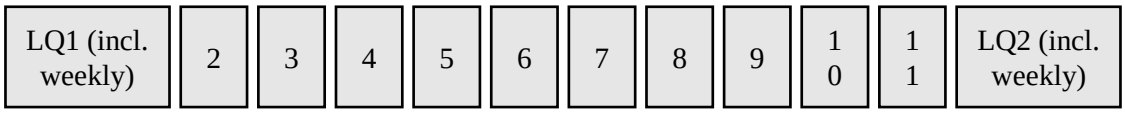
entrepreneurs (see Tacke, 2021, for more information on the pre-study poll). Specifically, we offered them the opportunity to place job advertisements on our website, participate in a workshop event, and receive a report with individual study results, a participation certificate, and student support. After the first and last questionnaires, we also called the participants by phone to remind them to fill out the questionnaire. Moreover, we sent each company encouraging thank-you postcards during the study (see Appendix 3 and Appendix 4). We also assured all participants of the anonymity and confidentiality of provided information. For 22.3% (i.e., n = 128) of the 574 new ventures contacted personally, at least one entrepreneurial founding team member filled out the first questionnaire. This response rate is consistent with previous studies on entrepreneurial well-being (e.g., 16% in Shir, Nikolaev, & Wincent, 2019) and on entrepreneurial founding teams (e.g., 23.7% in Rauter et al., 2018).

For 12 weeks in a row, participants received a link to their individualized online questionnaire each Friday. Participants who had not filled out their questionnaire by Monday at noon automatically received a reminder email. We recorded for all questionnaires at what time the participant had accessed the questionnaire. Completing the first long questionnaire (LQ1) took participants on average 32.06 minutes (SD = 9.89)[15]. The following weekly questionnaires on average took the participants 3.72 minutes to complete (SD = 1.77)[16]. In these questionnaires, we asked specific questions on setbacks, effort, and detachment. Apart from welcome and last page, these follow-on weekly questionnaires were identical. Completing the last questionnaire (LQ2) took participants on average 30.05 minutes (SD = 11.05)[17]. Next to the weekly questions, LQ1 and LQ2 included questions on demographic (age, gender) and personal information (part-time or full-time entrepreneur, entrepreneurial experience, number of children, relationship status), general information about the venture (venture age, venture size), and constructs

[15] Calculation is based on 91 LQ1s. Unusually long response times (i.e., more than 60 minutes) were excluded for the purpose of this calculation because participants probably only interrupted the completion of the questionnaire.
[16] Calculation is based on 1,710 weekly questionnaires. Unusually long response times (i.e., more than 10 minutes) were excluded for the purpose of this calculation because participants probably only interrupted the completion of the questionnaire.
[17] Calculation is based on 127 LQ2s. Unusually long response times (i.e., more than 60 minutes) were excluded for the purpose this calculation because participants probably only interrupted the completion of the questionnaire.

that we could later use for robustness tests (e.g., revenues, stress). Figure 6 presents the study design.

Figure 6. Study design of long questionnaires and short questionnaires



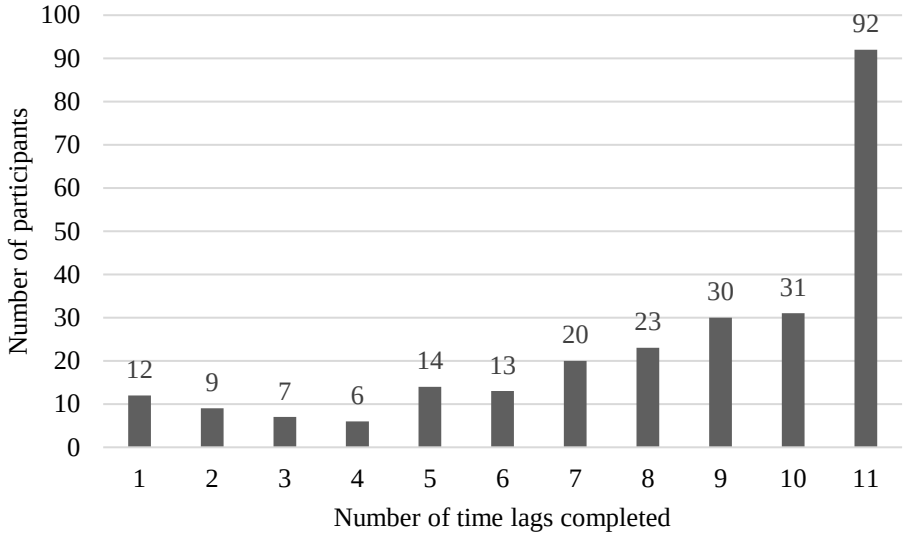
3.3.3 Sample

Because our theorizing links setbacks and *subsequent* psychological detachment, we could only include entrepreneurs who completed at least two questionnaires in a row (criterion: value for psychological detachment at time 1 (t) and time 2 one week later [t+1]). We further only included questionnaires that participants had filled out less than 168 hours (i.e., seven days) after receiving the invitation to ensure we captured consecutive weeks because we wanted our participants to regularly reflect on the past week. Exceeding 168 hours between invitation and response was not technically possible for questionnaires 2 to 11, as the questionnaire link expired at 0 o'clock the subsequent Friday. However, the links to LQ1 and LQ2 could technically be opened longer because we wanted to capture more constructs and provide participants with enough time to respond to it. When weekly measurements from LQ1 or LQ2 were excluded, we still integrated the general information for that person into our dataset, but we did not use the weekly short questionnaire from that week. Due to this reason, 32 weekly observations were excluded. The time interval between consecutive measurement points should not exceed two weeks (i.e., 336 hours) because, based on theoretical considerations, we did not expect setbacks to affect subsequent detachment after such a long period. Technically, 14 days between two measurements were possible between LQ1 and the first short questionnaire because we started the short questionnaire series only after all members of a team had completed LQ1 to make sure that the entire team refers to the same week. To rule out that technical problems biased our data, we cleaned our entire dataset to the 336 hours rule. Due to this reason, 70 weekly observations were excluded.

Our final sample consisted of 257 entrepreneurs from 119 entrepreneurial founding teams providing 2,318 questionnaires (on average 9 questionnaires per person). Figure 7

provides an overview of how many participants completed the respective number of time lags, where a time lag refers to two questionnaires from consecutive weeks (i.e., t, t+1). The maximum number of complete time lags per person is 11 because participants received 12 questionnaires and one time lag refers to two questionnaires in a row. About one third of the participants (35.8%; *N* = 92) completed 11 time lags and therefore do not have missing values. Twelve participants (4.7%) only completed one time lag and 76.3% of the participants (N = 196) completed more than half of the time lags (i.e., 7 to 11).

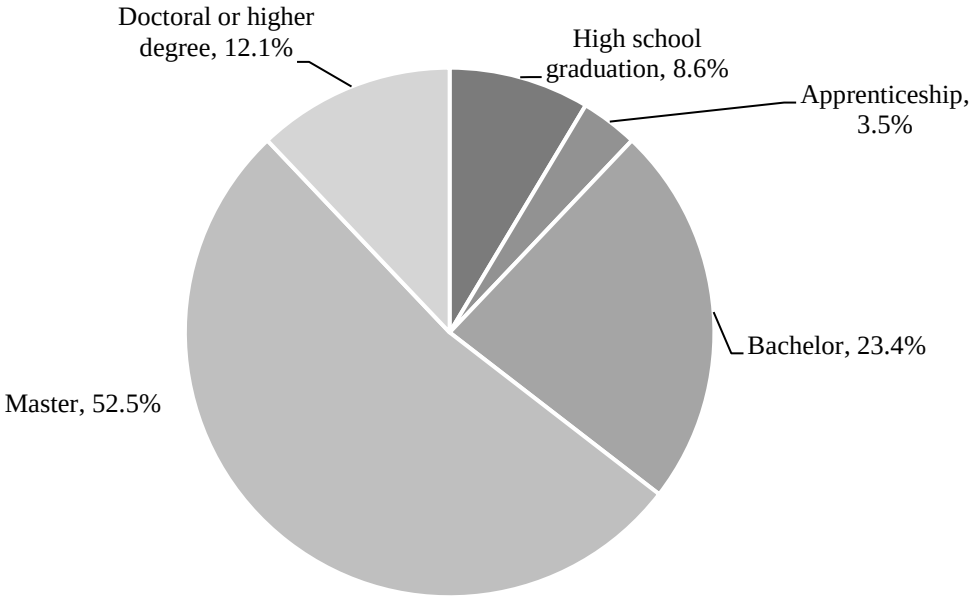
Figure 7. Complete time lags per participant



Note: One time lag refers to a sequence of data from two consecutive weeks (i.e., t, t+1).

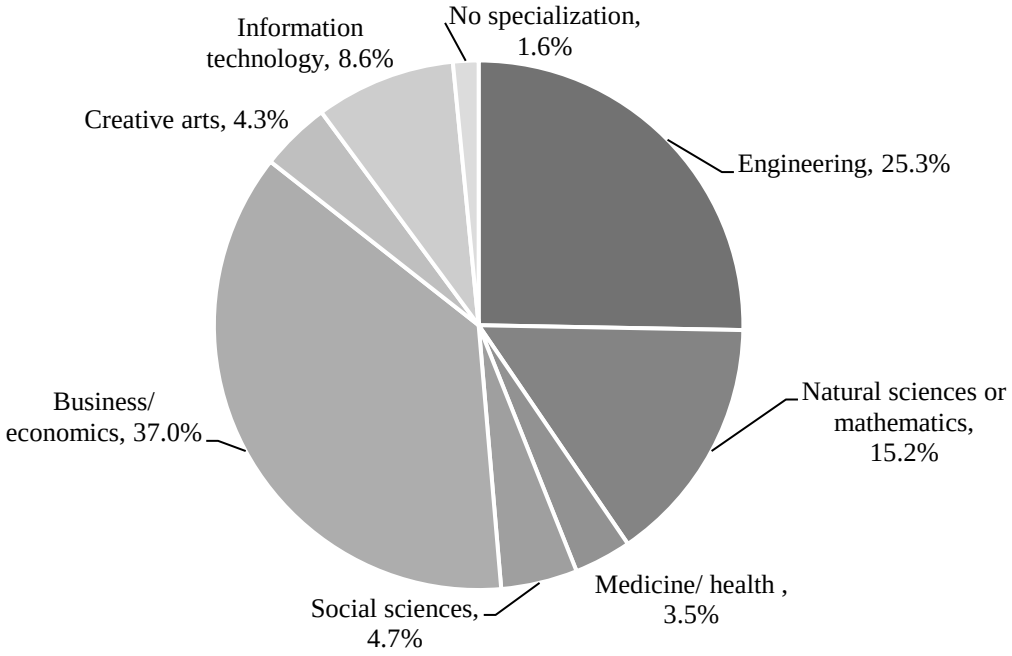
Participants were on average 34.97 years old (*SD* = 7.67, range: 21–64) and predominantly male (87.6%). Our participants were highly educated with 75.9% holding an academic degree (i.e., Bachelor or Master) and 12.1% having a doctoral degree or higher degree (see Figure 8 and Figure 9, for more details on the participants' educational level and field of education). In terms of their family situation, most participants (75.1%) had a partner and 60 persons (23.4%) had children living with them. About half of our participants (50.2%) indicated that they had founded at least one other venture prior to the current one.

Figure 8. Participants' educational levels



Notes: Apprenticeship includes Associate, as well as the German degrees "Techniker" and "Meister". Master includes the German degrees "Diplom", "IHK Betriebswirt", "Staatsexamen", "Magister" as well as teaching and MBA degrees. Doctoral or higher degree includes post-doctoral and professor positions or habilitation degree.

Figure 9. Participants' fields of education



Following our sampling strategy, participating new ventures were located in Germany. The ventures were, on average, 2.75 years old (*SD* = 1.32; range: 0.67–6.00) and had

8.82 members (i.e., entrepreneurial founding team members and employees; *SD* = 7.52; range: 2–52). About half of the ventures (51.3%) operated in the computer industry, 22.7% offered services, 10.1% of the ventures offered consumer products, 10.1% life science products, 4.2% belonged to e-commerce, and 1.7% to the science (materials and physical) industry. Most ventures (72.3%) were already generating revenues.

Two years after the end of the initial data collection, 30.3% of the participants (*N* = 77 out of 254 participants for which we were able to collect information) exited their venture and 17.1% of the ventures (*n* = 20 out of 117 ventures for which we were able to collect information) failed in the last two years. 97 of the ventures from our sample (82.9% of 117 ventures for which information was accessible) are still operating (as of November 25, 2021).

3.3.4 Non-response bias

We tried to avoid selection bias upfront by following recommendations by Rogelberg and Stanton (2007), which, for instance, include giving incentives for participation, sending reminders three days after sending an invitation, and providing participants with the opportunity to get in contact with the research team. Missing data in longitudinal studies can be a sign for systematic non-response bias, which is why differences regarding variables should be tested (Ployhart & Vandenberg, 2010). Therefore, to ensure that our sample was not substantially affected by non-response bias, we conducted specific tests.

Table 6. Non-response bias: complete vs. incomplete datasets

Construct	M (complete)	M (incomplete)	p
Age	34.97	34.97	0.998
Entrepreneurial experience	0.54	0.43	0.109
Gender	0.12	0.14	0.545
Psychological detachment	3.20	2.81	0.025*
Internal setbacks	2.43	2.57	0.279
External setbacks	2.44	2.45	0.897
Effort	46.12	46.89	0.768

Construct	M (complete)	M (incomplete)	p
Age	34.97	34.97	0.998

Notes: The person-mean value was used for the t-tests with week-level variables. Complete datasets (N = 165), incomplete datasets (N = 92). * $p < 0.05$.

First, consistent with prior work (Y. Park & Haun, 2017), we tested if our participants with complete datasets (i.e., 11 time lags) differed from participants with missing data (i.e., 1 to 10 time lags). We compared these groups in terms of age, gender, and entrepreneurial experience as well as psychological detachment, internal setbacks, external setbacks, and effort (using the person-mean values for the week-level variables). As Table 6 indicates, two-sample t-tests revealed no statistically significant differences between these groups referring to age, entrepreneurial experience, gender, internal setbacks, external setbacks, and effort. However, the values for psychological detachment differed statistically significantly between participants with complete datasets and participants with incomplete datasets (M [complete] = 3.20, M [incomplete] = 2.81, p = 0.025), which means that the group with missing data had a statistically significantly lower value of person-mean detachment than the group with complete datasets. Therefore, we lack data points of participants experiencing lower levels of psychological detachment. However, because we focus on fixed effects and thereby only consider intra-individual differences (fluctuations within a person around the person's mean values), differences in the participants' average levels of detachment should not bias the relationships of our model.

Second, we compared participants that only completed LQ1 with participants in the final dataset, which we used for hypotheses tests along demographic and model variables. Table 7 shows that age, entrepreneurial experience, gender, psychological detachment, and effort did not differ statistically significantly between participants from LQ1 only and participants from our final dataset. However, the means of internal setbacks (M [LQ1 only] = 3.16, M [final] = 2.42, p = 0.047) and external setbacks (M [LQ1 only] = 3.37, M [final] = 2.54, p = 0.032) differed statistically significantly between these two participants groups. This means that LQ1 only participants had experienced significantly higher levels of both internal and external setbacks than the final participants. Thus, there may exist a bias towards a selection of participants in our final dataset that are facing lower

levels of setbacks. Presumably, participants facing higher levels of setbacks decided not to take part in the study, for instance, due to time-constraints, violating the assumption of random selection of participants and infusing a potential self-selection bias (Heckman, 1979). While we are confident that our results are robust based on our theoretical reasoning (see chapter 3.2), our results may have limited validity for individuals who experience particularly high levels of setbacks. Future research may attempt to reduce the burden on participants by using shorter questionnaires and motivating those individuals who face particularly high levels of setbacks to continue participation in the study.

Table 7. Non-response bias: LQ1 only participants vs. final participants

Construct	*M* (LQ1 only)	*M* (final)	p
Age	33.75	34.97	0.452
Entrepreneurial experience	0.38	0.50	0.236
Gender	0	0.12	0.067
Psych. detachment	2.63	2.81	0.648
Internal setbacks	3.16	2.42	0.047*
External setbacks	3.37	2.54	0.032*
Effort	52.42	50.99	0.786

Notes: For the personal variables (age, entrepreneurial experience, gender), we had data from 24 LQ1 only participants. For the week-level variables (psychological detachment, internal setbacks, external setbacks, effort), we only had data from 19 LQ1 only participants due to missing values. In both variable groups, the number of final participants was 257. * $p < 0.05$.

3.3.5 Measures

We framed each week-level item to refer to the last seven days. Before we started with the data collection, we had solicited extensive feedback on our questionnaires from entrepreneurs similar to those in our sample and entrepreneurship researchers.

Dependent variable: Psychological detachment. To measure psychological detachment, we relied on the well-established psychological detachment subscale of the recovery experience questionnaire (Sonnentag & Fritz, 2007b), adding the pre-clause "During non-work time in the last 7 days" to each item (see Bakker et al., 2015, for a study on the state version of the psychological detachment scale). In the frame of the first round of interviews of the BEST study, we tested the original items from the Recovery Experience

Questionnaire (Sonnentag & Fritz, 2007b; see Table 8, for the items) among 42 entrepreneurs. These pre-tests revealed that the psychological detachment scale was reliable (α = 0.85) in the entrepreneurial context and that there was a sufficiently large variance between the entrepreneurs (M = 3.03 on a scale from 1 to 5, SD = 1.22). To reduce burden on our participants, we selected only two items from the 4-item psychological detachment scale. We opted for item 1 (i.e., "I forgot about work.") and item 2 (i.e., "I didn't think about work at all.") because previous research had shown the highest factor loadings for these two items (Sonnentag & Fritz, 2007b) and our pre-test revealed the highest Cronbach's alpha (i.e., 0.85) for the combination of these two items (see Table 9, for the results of the reliability analysis). Participants could choose on a scale from 1 (*not at all*) to 7 (*completely*) to what extent they agreed to the items (see Table 10). Analyses revealed high reliability for the psychological detachment measure, that is, the average alpha across all weeks was 0.89.

Table 8. Original items in scale for psychological detachment

#	Original item (English; Sonnentag & Fritz, 2007b, p. 213)	Original item (German; provided by author upon request: Sonnentag & Fritz, 2007a)	Original rating scale (English)	Original rating scale (German)
1	I forget about work.	Ich konnte die Arbeit vergessen.	1 – 5	1 (trifft gar nicht zu) – 5 (trifft völlig zu)
2	I don't think about work at all.	Ich habe überhaupt nicht an die Arbeit gedacht.		
3	I distanced myself from my work.	Ich habe mich von der Arbeit distanziert.		
4	I got a break from the demands of work.	Ich konnte mir eine Auszeit von den Herausforderungen der Arbeit nehmen.		

Table 9. Pre-test on reliability of psychological detachment among entrepreneurs

Item inclusion (numbers refer to the original items as presented in Table 8)	Cronbach's alpha
1, 2, 3, 4	0.85
1, 2	0.85
1, 3	0.76
1, 4	0.82

Item inclusion (numbers refer to the original items as presented in Table 8)	Cronbach's alpha
1, 2, 3, 4	0.85
2, 3	0.57
2, 4	0.63
3, 4	0.71

Notes: N = 42, *M* = 3.03 (*SD* = 1.22), range: 1-5.

Table 10. Adapted items in scale for psychological detachment

#	Adapted item (English)	Adapted item (German)	Rating scale (English)	Rating scale (German)
0	Now please think about what you have done in the last 7 days in your "non-work time". This may be after or before work, breaks during work or on the weekend. Please indicate to what extent the following statements apply to your last 7 days.	Denken Sie nun bitte daran, was Sie in den letzten 7 Tagen in Ihrer Freizeit gemacht haben. Das kann nach oder vor der Arbeit sein, in Arbeitspausen oder am Wochenende. Bitte geben Sie an, inwieweit die folgenden Aussagen auf Ihre letzten 7 Tage zutreffen.	-	-
1	During non-work time in the last 7 days, I forgot about work.	In meiner Freizeit in den letzten 7 Tagen habe ich die Arbeit vergessen.	1 (not at all) – 7 (completely)	1 (überhaupt nicht) – 7 (voll und ganz)
2	During non-work time in the last 7 days, I didn't think about work at all.	In meiner Freizeit in den letzten 7 Tagen habe ich überhaupt nicht an die Arbeit gedacht.	1 (not at all) – 7 (completely)	1 (überhaupt nicht) – 7 (voll und ganz)

Note: Items were adapted from the original scale by Sonnentag and Fritz (2007b).

Independent variables: Internal and external setbacks. To measure setbacks, we developed two items asking to what extent entrepreneurs had experienced difficulties with internal and external stakeholders in the last seven days. We deemed this more relevant than capturing objective data as our definition of setbacks is based upon the entrepreneur's perception of a setback (Rauter et al., 2018; van Gelderen et al., 2011). We framed the item wording of setbacks following Uy et al.'s (2021) definition of setbacks as venture-relevant negative events and added explanations for the different types of setbacks related to internal and external stakeholders. Participants could indicate on a scale from

1 (*not at all*) to 7 (*a lot*) to what extent i) "events internal to the venture (e.g., human mistakes, misfortunes, frictions within the venture)" for internal setbacks and ii) "events external to the venture (e.g., negative reaction from customers and investors, setbacks in negotiations, failed attempts to make contacts)" for external setbacks, had limited the progress of their venture (see Table 11). To test if our theoretical distinction between internal and external setbacks is also reflected in our data, we computed the Cronbach's alpha from these two items and ran a confirmatory factor analysis (CFA) based on a single latent construct. The average alpha across all weeks was 0.54, which is below the recommended cut-off convention of 0.70 (Cortina, 1993). CFAs for all weeks revealed highly fluctuating factor loadings ranging from 0.22 to 0.61, with average factor loadings for internal setback of 0.38 and for external setback of 0.37, which – below the value of 0.70 – can be considered to be low (Hair et al., 2014). Thus, our data confirm the assumption that aggregating internal and external setbacks into one construct would not be appropriate.

Table 11. Items for entrepreneurial setbacks

#	Own item (English)	Own item (German; own translation)	Rating scale (English)	Rating scale (German)
0	To what extent did the following events limit the progress of your venture over the last 7 days:	Inwieweit waren die folgenden Ereignisse für den Fortschritt Ihrer Firma in den letzten 7 Tagen hinderlich:	-	-
1	[internal setbacks] Events internal to the venture (e.g., human mistakes, misfortunes, frictions within the venture)	Ereignisse innerhalb des Unternehmens (z.B. menschliche Fehler, Missgeschicke, Reibungsverluste in der Firma)	1 (not at all) – 7 (a lot)	1 (überhaupt nicht) – 7 (sehr stark)
2	[external setbacks] Events external to the venture (e.g., negative reaction from customers and investors, setbacks in negotiations, failed attempts to make contacts	Ereignisse außerhalb des Unternehmens (z.B. negative Kunden- und Investorenreaktionen, Rückschläge in Verhandlungen, misslungene Anbahnungen von Kontakten)	1 (not at all) – 7 (a lot)	1 (überhaupt nicht) – 7 (sehr stark)

Moderator variable: Effort. To measure effort, we used one item asking participants how many hours they had worked for the venture in the last seven days (see Table 12). Our operationalization of effort is in line with prior entrepreneurship research, indicating that working hours reflect the entrepreneurs' voluntary engagement in their venture (see Bitler et al., 2005; Laffineur et al., 2020; Sauermann, 2018).

Table 12. Item for effort

Own item (English)	Own item (German; own translation)	Scale (English)	Scale (German)
Please estimate how many hours in total you worked for the venture in the last 7 days.	Bitte schätzen Sie, wie viele Stunden Sie insgesamt in den letzten 7 Tagen für das Unternehmen gearbeitet haben.	Please enter a whole number/ integer.	Bitte geben Sie eine ganze Zahl an.

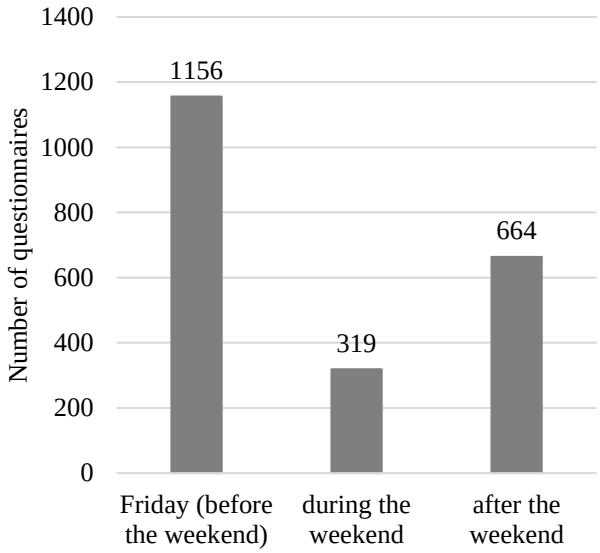
Control variables. We controlled for several theoretically relevant variables, which may be related to our independent and dependent variables. First, we controlled for psychological detachment in the previous week. By modelling a lagged dependent variable, that is, the autocorrelation, we could account for the temporal order and provide evidence for the direction of the effect (Uy et al., 2010). Moreover, by separating the measurement of independent and dependent variables temporally, we used a common strategy to reduce the likelihood of common-method bias (Williamson et al., 2019), which describes the problem of "variance that is attributable to the measurement method rather than to the constructs the measures represent" (Podsakoff et al., 2003, p. 879).

Second, we controlled for two aspects of time: We included the number of the study week "to control for the linear trajectory" (Weinberger et al., 2018, p. 8) of psychological detachment throughout our study. We also controlled for the hours between invitation and the participants' response to the online questionnaire (i.e., hours after invitation) because previous research has shown that levels of psychological detachment can vary with time (Hülsheger et al., 2014). This means that participants may rate their level of psychological detachment differently depending on when they complete the questionnaire (e.g., close to the weekend vs during the next working week). An overview on the time of the week when participants filled out the questionnaire is presented in Figure 10.

Third, we controlled for participants' age as younger persons may be less effective in their recovery from work than older ones (Weinberger et al., 2018) (see Appendix 5, for the items at the person-level).

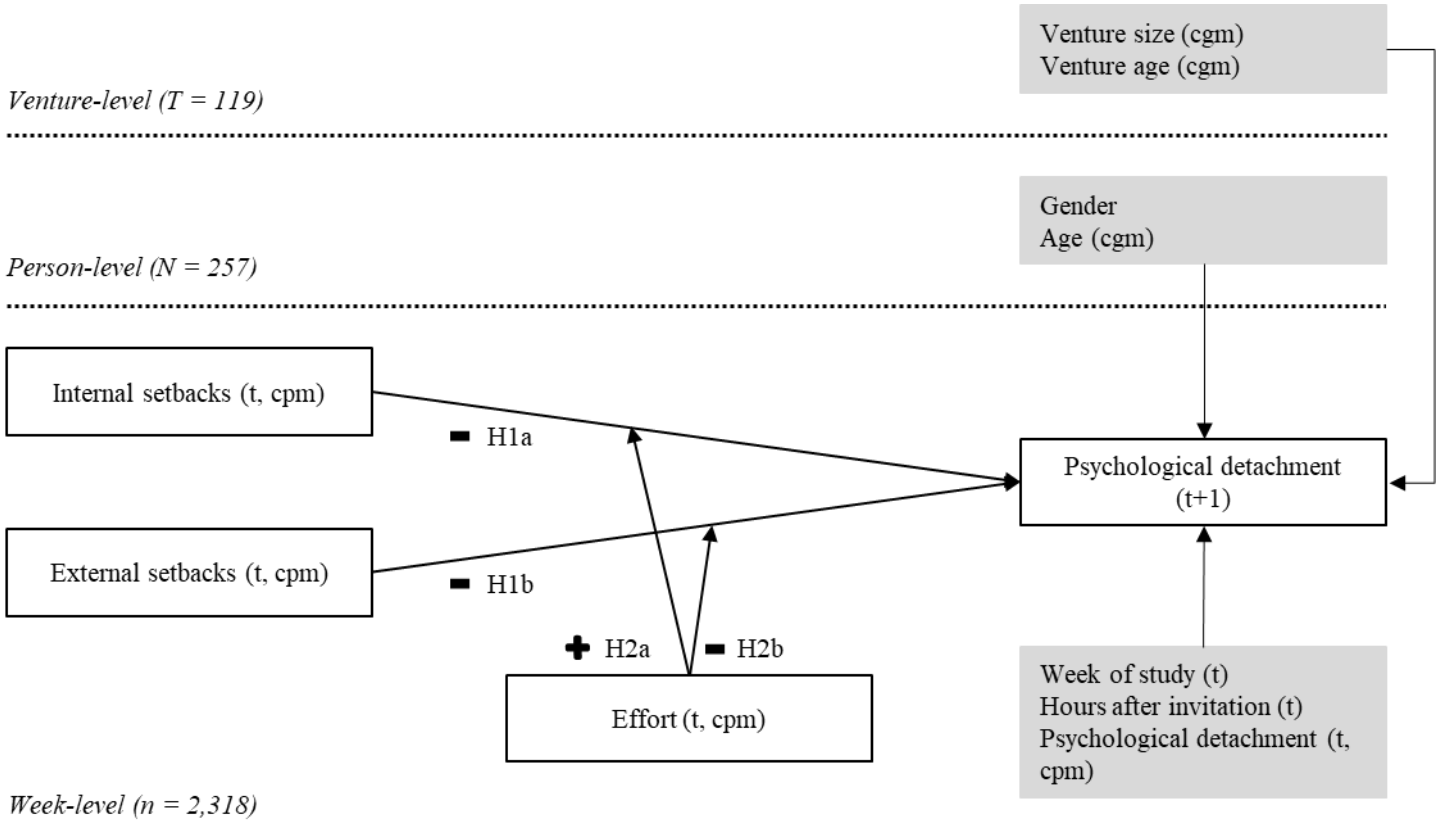
Fourth, we controlled for gender (0 = male, 1 = female) as we wanted to avoid that the effects on psychological detachment would be confounded by demographic characteristics of the participants (Taris et al., 2008).

Figure 10. Time when participants filled out the questionnaire



Fifth, because characteristics of the venture may influence the way individuals deal with stressors and subsequently the extent to which they detach from work (Rauch et al., 2018), we controlled for venture size and venture age (see Appendix 6, for the items at the venture-level). Larger and more mature ventures may offer more resources for the entrepreneurs to address setbacks, causing less stress and easing detachment.

Figure 11. Research model



Notes: cpm = variable centered at the person-mean; cgm = variable centered at the grand-mean; control variables in grey boxes.

3.3.6 Statistical analysis

Our data structure is multilevel (Hox et al., 2017) because we have data at three levels. As displayed in Figure 11, data at the week-level are nested in persons and the person-level data are nested in ventures (i.e., venture-level). Values at the week-level are not independent since several values are available from one person, which tend to be more similar than values between persons. Similarly, at the person-level, values of members of one venture tend to be more similar than values of members from different ventures. Thus, to avoid confounded effects, we considered all three levels of analysis, that is, week-level, person-level, and venture-level in our statistical analyses.

Except for the time variables, we centered all week-level variables at the person-mean so that the model estimators were more comparable and thus easier to interpret (Hofmann & Gavin, 1998). Centering variables at mean values helps to interpret the "intercept and slope parameters of multilevel models" (Enders & Tofighi, 2007, p. 121) because the value zero of the dependent variable can then be interpreted more meaningfully (Enders & Tofighi, 2007; Hofmann & Gavin, 1998). Because our dataset involved three levels, two different mean values are possible for centering a level 1 variable: (i) the grand-mean over all individuals and weekly measurements, and ii) the person-mean over all weekly measurements of one person (Nezlek et al., 2006). Which centering method is appropriate depends on statistical and conceptual considerations, specifically referring to the research question of interest as well as the level of analysis of the dependent variable. Following the recommendation of Enders and Tofighi (2007), we centered all level 1 variables at the person-mean because we were interested in intraindividual fluctuations of a level 1 dependent variable, that is, changes of psychological detachment within individuals. Following studies with similar research designs (Wach et al., 2021), we did not person-mean center time because the person-means of time-related variables (i.e., week of study, hours after invitation) are not meaningful. To temporally separate independent and dependent variables, we restructured our final dataset so that we could analyze our lagged dependent variable (t+1) with our independent (t) and control variables in one model. We centered person-level and venture-level variables at the grand-mean. Gender was not centered because it was a binary variable.

Our multilevel data structure requires hierarchical linear modeling (HLM) (Raudenbush & Bryk, 2002). Longitudinal data naturally violate two common assumptions of statistical tests, that is, independence of residuals and normality of residuals (i.e., homoscedasticity) (Ployhart & Vandenberg, 2010). First, the assumption of independence of residuals is usually violated for a nested data structure (Hox et al., 2017), because repeated measurements of one individual tend to be correlated (Bliese & Ployhart, 2002; Ployhart & Vandenberg, 2010; Raudenbush & Bryk, 2002). As indicated before, to avoid autocorrelation with repeated measurements (Bliese, 2000), we conceptualized our model with a time lag between independent and dependent variable and controlled for the dependent variable in the previous week (i.e., detachment [t]). Second, residuals that are not normally distributed and thus involve heteroscedasticity may affect statistical tests but occur frequently in longitudinal models (Ployhart & Vandenberg, 2010). To avoid a bias due to heteroscedasticity, we used robust standard errors (Hox et al., 2017), which are considered to be appropriate for large sample sizes bigger than 50 at the group level (Maas & Hox, 2004). Our dataset involves 257 individuals at level 2 and 119 teams at level 3. Thus, applying robust standard errors was appropriate.

Using the *mixed* command of the statistical software Stata 14 (StataCorp, 2015) we were able to account for the different levels and test our hypotheses at the week-level, excluding potentially confounding variance at the person- and venture-levels. Based on theoretical assumptions, we only refer to fixed effects. We calculated all our models with robust standard errors using the *vce(robust)* command in Stata (StataCorp, 2015).

3.4 Results

In the following, we present our findings in relation to descriptive statistics, correlations, and multicollinearity, our hypotheses, model fit, robustness and post hoc analyses.

3.4.1 Descriptive statistics, correlations, and multicollinearity

We display descriptive statistics and correlations in Table 13. Entrepreneurs' weekly psychological detachment was moderate (M = 2.99; SD = 1.70; Min = 1.00; Max = 7.00). Internal setbacks (M = 2.47; SD = 1.51; Min = 1; Max = 7) and external setbacks (M =

2.44; *SD* = 1.49; *Min* = 1; *Max* = 7) occurred with a similar frequency. At an average of 46.24 hours, effort was quite high compared to typical full-time employment contracts with 40 working hours per week but varied considerably (*SD* = 22.26 hours; *Min* = 0 hours; *Max* = 140 hours) and was similar to other entrepreneurship samples (e.g., *M* = 45.57 hours, Murnieks, Arthurs, et al., 2020; *M* = 45.3 hours, Bitler et al., 2005). Between-person correlations (using the person-mean values of all weekly variables) show that psychological detachment was only significantly related to effort (r = -0.37; p < .001). Within-person correlations at the week-level indicated that psychological detachment was significantly associated with internal setbacks (r = -0.07; p = .009) and effort (r = -0.30; p < .001).

Correlations can point to potential issues of multicollinearity, which refers to the "(e)xtent to which a variable can be explained by the other variables in the analysis. As multicollinearity increases, it complicates the interpretation of the *variate* because it is more difficult to ascertain the effect of any single variable, owing to their interrelationships" (Hair et al., 2014, p. 2). To prevent potential issues in multicollinearity, a model should be sufficiently parsimonious because more added variables can increase the risk of correlation between them (Hair et al., 2014). To avoid this issue, we built our model guided by theoretical considerations. Applying another common strategy to avoid multicollinearity in hierarchical models, we applied person-mean centering for level 1 variables (Wach et al., 2021; Weinberger et al., 2018), because potential correlations between measurements are eliminated (Nezlek et al., 2006).

Table 13. Means, standard deviations, and correlations

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1 Detachment (t)	2.99	1.70	–	0.61**	-0.07**	-0.02	-0.30**	0.02	0.13**			
2 Detachment (t+1)	3.02	1.69	0.91**	–	-0.09**	-0.04	-0.25**	0.01	0.07**			
3 Internal set-backs (t)	2.47	1.51	-0.06	-0.08	–	0.37**	0.09**	0.0	-0.04			
4 External set-backs (t)	2.44	1.49	0.00	-0.06	0.59**	–	0.06**	-0.01	-0.02			
5 Effort (t)	46.24	22.26	-0.37**	-0.33**	0.14*	0.11	–	-0.02	-0.12**			
6 Week of study (t)	5.89	3.10	0.02	-0.06	-0.12	-0.01	-0.06	–	0.0			
7 Hours after invitation (t)	36.83	38.96	0.09	0.19**	0.02	-0.13*	-0.14*	-0.15*	–			
8 Age	34.97	7.67	0.05	0.0	0.04	0.13*	-0.15*	0.13*	-0.20**	–		
9 Gender [a]	0.12	0.33	0.02	0.03	0.01	-0.07	-0.25**	0.02	0.02	0.05	–	
10 Venture age	2.75	1.32	0.03	-0.05	0.08	0.10	-0.04	-0.07	-0.02	0.26**	0.07	–
11 Venture size	8.82	7.52	0.01	-0.03	0.00	-0.02	0.14*	-0.04	-0.07	0.05	-0.14*	0.28**

Notes: Correlations above the diagonal are at the week-level. Correlations below the diagonal are at the person-level. Means and standard deviations are aggregated at the respective level. Values are not centered. [a] 0 = male, 1 = female. * $p \leq 0.05$; ** $p \leq 0.01$.

Moreover, to assess potential multicollinearity, Hair et al. (2014) recommend to evaluate the correlations between independent variables and to compute variance inflation factors (VIFs) for all independent variables included in a model. VIFs refer to "the degree to which the standard error has been increased due to multicollinearity" (Hair et al., 2014, p. 197). Thus, higher values of VIFs indicate higher multicollinearity (Hair et al., 2014). Following prior research using multilevel modelling (Breugst et al., 2020), we computed VIFs after running a regression analysis of our model. As presented in Table 14, all VIFs were below the commonly used threshold of 10 (Hair et al., 2014) (highest VIF = 1.30). Thus, multicollinearity did not seem to be an issue in our model. Moreover, correlations should not exceed 0.70 (Hair et al., 2014), which is the case for all within-person correlations (see Table 13). The only between-person correlation exceeding 0.70 is the one between detachment (t) and detachment (t+1). To eliminate this multicollinearity, we centered detachment (t) at the person-mean, so that the error variance attributed to the person was eliminated. Therefore, multicollinearity should be no issue in our model.

Table 14. Variance inflation factors

Construct	VIF
Detachment (t, cpm)	1.08
Week of study (t)	1.00
Hours after invitation (t)	1.02
Age (cgm)	1.08
Gender (cgm)	1.04
Venture age (cgm)	1.20
Venture size (cgm)	1.14
Internal setbacks (t, cpm)	1.07
External setbacks (t, cpm)	1.07
Effort (t, cpm)	1.07
Internal setbacks (t, cpm) x effort (t, cpm)	1.30
External setbacks (t, cpm) x effort (t, cpm)	1.29

Notes: cpm = variable centered at the person-mean; cgm = variable centered at the grand-mean.

3.4.2 Hypotheses testing

As displayed in the research model in Figure 11, we tested all four hypotheses at the week-level with predictors centered at the person-mean. Computing the intraclass correlation coefficients (ICC) for the null model of psychological detachment, that is, the percentage of variance that is explained by the person, demonstrated substantial within-person variance (i.e., 47.6%), justifying the use of HLM. The predictors varied strongly from week to week with 70.3% within-person variance of the total variance of internal setbacks and 71.5% within-person variance of the total variance of external setbacks. Effort seemed to be more stable with 24.1% within-person variance of the total variance. As displayed in Table 15, ICCs of psychological detachment were higher than the common threshold for substantial clustered variance of 0.05 (LeBreton & Senter, 2008), namely ICC (venture-level) = 0.06 and ICC (person-level) = 0.52. Thus, we specified our models including all three levels.

Table 15. Analyses of variance components for each variable per level

	Variance explained by fluctuations within person	Variance explained by person	Variance explained by team
Detachment (t+1)	47.6%	46.0%	6.4%
Internal setbacks (t)	70.3%	21.4%	8.2%
External setbacks (t)	71.5%	16.8%	11.5%
Effort (t)	24.1%	40.4%	35.8%

In all our models, we allowed the intercept to vary randomly at both level 2 (i.e., person) and level 3 (i.e., venture). This means that while the persons and ventures statistically can have different starting points resulting from the individual's and venture's average values (i.e., random intercepts), the nature of an effect is statistically modelled as the average across all participants (i.e., fixed slope). For all our hypotheses, we are referring to the fixed effect analyses.

As displayed in Table 16, Model 1 represents our null model. In Model 2, we entered all control variables. Then, Model 3 includes the predictors internal and external setbacks. In Model 4, we also included effort to test the main effects because we assumed that effort could influence the subsequent level of psychological detachment based on prior

research in organizational behavior literature (Clinton et al., 2017). Model 5 then represents the full model.

H1a suggests that internal setbacks are negatively related to entrepreneurs' subsequent level of psychological detachment. Consistent across all models including internal setbacks, results reveal the expected significantly negative relationship of internal setbacks on psychological detachment (e.g., b = -0.06, p = .006 in Model 5), supporting H1a. In H1b, we postulate that external setbacks are negatively related to entrepreneurs' subsequent level of psychological detachment. Consistent across all models including external setbacks, the fixed effect of external setbacks on psychological detachment was not statistically significant (e.g., b = -0.03, p =.225 in Model 5), as such not supporting H1b.

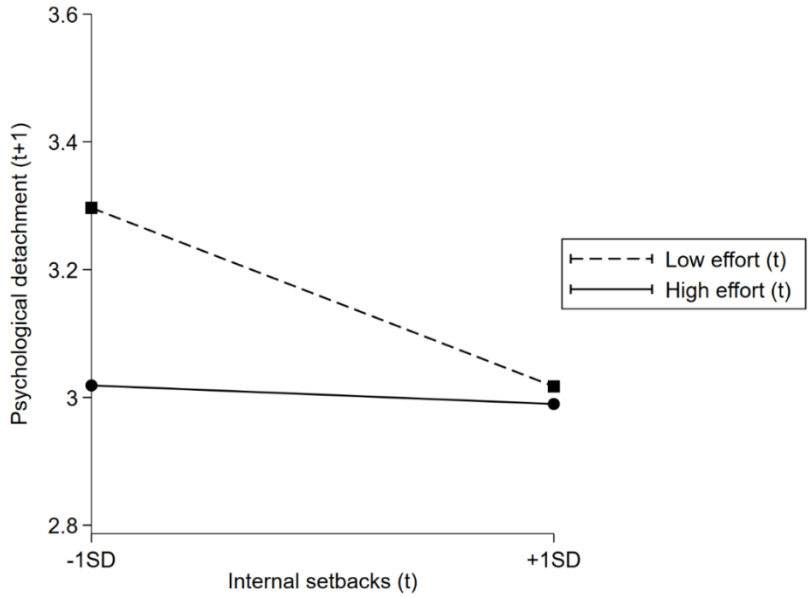
Table 16. HLM results for psychological detachment (t+1)

	Model 1			Model 2			Model 3			Model 4			Model 5		
	Est	SE	z	Est	SE	z	Est	SE	z	Est	SE	z	Est	SE	z
Intercept	3.07	0.09	34.62**	3.04	0.12	25.70**	3.04	0.12	25.71**	3.04	0.12	25.60**	3.05	0.12	25.69**
Week of study (t)				0.00	0.01	0.24	0.00	0.01	0.25	0.00	0.01	0.16	0.00	0.01	0.20
Hours after invitation (t)				0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	-0.05	0.00	0.00	-0.09
Detachment (t)				0.12	0.02	4.87**	0.12	0.02	4.84**	0.10	0.02	4.39**	0.10	0.02	4.25**
Internal setback (t)							-0.06	0.02	-2.58**	-0.06	0.02	-2.61**	-0.06	0.02	-2.76**
External setback (t)							-0.03	0.02	-1.49	-0.03	0.02	-1.37	-0.03	0.02	-1.21
Effort (t)										-0.01	0.00	-2.69**	-0.01	0.00	-2.70**
Internal setback (t) x effort (t)													0.01	0.00	2.14*
External setback (t) x effort (t)													-0.01	0.00	-3.41**
Age				0.00	0.01	0.36	0.00	0.01	0.36	0.00	0.01	0.35	0.00	0.01	0.35
Gender [a]				0.15	0.26	0.59	0.15	0.26	0.59	0.15	0.26	0.59	0.15	0.26	0.59
Venture age				-0.06	0.07	-0.80	-0.06	0.07	-0.80	-0.06	0.07	-0.80	-0.06	0.07	-0.82
Venture size				0.00	0.01	-0.06	0.00	0.01	-0.06	0.00	0.01	-0.06	0.00	0.01	-0.09
- Log Pseudolikelihood	3665.51			3650.60			3644.40			3640.00			3633.89		
Wald chi²	-			25.00**			38.06**			43.50**			56.08**		
df	4			11			13			14			16		
AIC	7339.01			7323.20			7314.81			7308.00			7299.78		
Person-level ICC	0.52	0.03		0.53	0.03		0.53	0.03		0.53	0.03		0.53	0.03	
Venture-level ICC	0.06	0.05		0.07	0.05		0.07	0.05		0.07	0.05		0.07	0.05	

Notes: Est = unstandardized estimate. SE = robust standard error. AIC = Akaike Information Criterion. ICC = Intraclass correlation coefficient. All models are calculated with robust standard errors to rule out problems of heteroscedasticity of residuals. [a] 0 = Male, 1 = Female. * $p \leq 0.05$; ** $p \leq 0.01$.

To test our hypotheses H2a and H2b, we entered the interaction effects to our main effects model. H2a postulates that the relationship between internal setbacks and the subsequent level of psychological detachment is less negative when the entrepreneur invests higher compared to lower effort. Model 5 in Table 16 shows that the interaction term is positive and statistically significant (b = 0.01, p = .032). To graphically illustrate this interaction effect, we plot it in Figure 12.

Figure 12. Moderation effect of effort on the relationship between internal setbacks and psychological detachment



The x-axis shows the level of internal setbacks (t); the y-axis refers to the predicted value of psychological detachment in the subsequent week (t+1). The values for internal setbacks are person-mean centered, which means that the plot shows an individual's deviation from their mean value across all weeks. Thus, higher values of internal setbacks indicate that a person has experienced higher levels of internal setbacks relative to their individual average level of internal setbacks. The plot shows that under lower levels of effort, psychological detachment in the following week is lower if entrepreneurs experienced higher levels of internal setbacks. Simple slope analyses reveal that, as displayed in the plot, the slope for low levels of effort (-1 SD) was significant and negative (simple slope = -0.12, p = .001). For high effort (+1 SD), though, the slope was not significantly different from zero (simple slope = -0.01, p = .722). Thus, in weeks in which entrepreneurs invest rather high levels of effort, the level of internal setbacks does not

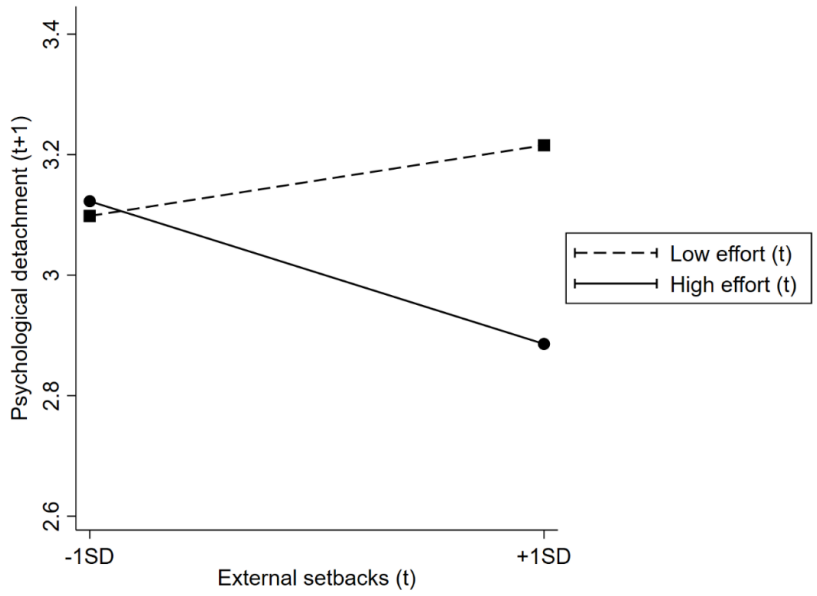
significantly change the subsequent level of psychological detachment. Our findings are thus consistent with H2a.

Table 17. Results of simple slope analysis of internal setbacks x effort

Effort	Slope coefficient	Robust standard error	p	95% confidence interval	
Low (-1 SD)	-0.12	0.03	0.001	-0.184	-0.051
Medium (M)	-0.06	0.02	0.006	-0.111	-0.019
High (+1 SD)	-0.01	0.03	0.722	-0.079	0.055

H2b postulates that the relationship between external setbacks and the subsequent level of psychological detachment is more negative when the entrepreneur invests higher compared to lower effort. Model 5 in Table 16 shows that the interaction term is negative and significant (b = -0.01, p = .001). To better understand this moderation effect, we plot it in Figure 13.

Figure 13. Moderation effect of effort on the relationship between external setbacks and psychological detachment



Similar to Figure 12, the x-axis shows the level of external setbacks (t); the y-axis shows the predicted value of psychological detachment in the following week (t+1). Again, values for both external setbacks and effort are person-mean centered. Accordingly, higher levels of external setbacks indicate that a person has experienced higher levels of external

setbacks relative to their individual mean value. The graphic shows that for lower levels of effort (-1 SD), subsequent psychological detachment slightly increases as a function of external setbacks. However, simple slope analyses show that the slope is not significantly different from zero (simple slope = 0.05, p = .129). For high effort (+1 SD), both the plot and simple slope analyses show that higher levels of external setbacks decrease the subsequent levels of psychological detachment (simple slope = -0.10, p < .001) (see Table 18). Thus, when entrepreneurs experienced external setbacks and at the same time invested high effort, their subsequent psychological detachment is lower. These findings are consistent with H2b.

Table 18. Results of simple slope analysis of external setbacks x effort

Effort	Slope coefficient	Robust standard error	p	95% confidence interval	
Low (-1 SD)	0.05	0.03	0.129	-0.014	0.113
Medium (M)	-0.03	0.02	0.225	-0.066	0.015
High (+1 SD)	-0.10	0.03	0.0	-0.153	-0.046

3.4.3 Model fit

To further evaluate if the hypothesized Model 5 fits our data best, we compared Models 1 to 5 in terms of their model fit. In addition to hypotheses tests, different models can be compared using information criteria, such as Akaike's Information Criterion (AIC), which has the advantage that multiple models can be compared and that the compared models do not need to be nested in one another (Hamaker et al., 2011). The idea of using the information criterion AIC for model comparison is to "find the best approximating model" (Hamaker et al., 2011, p. 233) and the model with the *lowest* value should be selected from several compared models (Hamaker et al., 2011). As displayed in Table 16, the AIC constantly declines from Model 1 (AIC = 7339.01) to Model 5 (AIC = 7299.78), which is the hypothesized model. Thus, using the information criterion AIC and confirming our hypotheses, Model 5 has the best model fit of all compared models.

A second approach to compare models is to estimate the explained variance, that is, in the case of multilevel models, the Pseudo R^2 value. In three-level multilevel models as is

ours, “the level-one explained proportion of variance can be defined here as the proportional reduction in the sum of these three parameters” (Snijders & Bosker, 1999, p. 113). we calculated Pseudo R^2 values for Models 2 to 5 according to Snijders and Bosker’s (1999) formula. Table 19 shows that the values of Pseudo R^2 are continuously increasing from Model 2 explaining 0.8% to Model 5 explaining 1.6% of the level 1 error variance. This shows that Model 5, including both main effects and interaction effects, explains most level 1 error variance and thus fits our data best.

Table 19. Pseudo-R-squared values

	Model 2	Model 3	Model 4	Model 5
Pseudo R^2 (level 1)	0.008	0.011	0.012	0.016

Note: We computed Pseudo R^2 “by comparing the model of interest with the null model” (Uy et al., 2015, p. 8).

As AIC values decrease and Pseudo R^2 values increase when the independent variables (Model 3) and moderation effects (Model 5) are added, we conclude that it is reasonable for this dataset to model these effects. Because with our dataset, we widely exceed Gabriel et al.’s (2019) recommendation of 83 individuals (level 2, person-level) and 835 observations (level 1, week-level) (for Experience Sampling Methodology, which is statistically similar to multilevel modeling), our relatively small effect sizes and Pseudo R^2 values may hint to an overpowering issue where level 1 sample size is high (Gabriel et al., 2019). However, Gabriel et al. (2019) also emphasize that even small effect sizes can be practically meaningful and should, thus, not be neglected. Furthermore, small Pseudo R^2 values can also be due to the lagged modelling of psychological detachment: As the control variable psychological detachment from the previous week (t) and the dependent variable psychological detachment (t+1) are highly correlated (r[within-person] = 0.61; see Table 13), the value of Pseudo R^2 may be underestimated (Hox, 2010, as cited in Breugst & Shepherd, 2017).

3.4.4 Robustness tests

We conducted several analyses to test the robustness of our models. As presented in Table 20, Table 21, and Table 22, these tests support our results.

First, we tested whether controlling for *entrepreneurial experience* would substantially change our findings because previous research has found differential effects of job stressors on recovery for experienced versus novice entrepreneurs (Kollmann et al., 2019). Thus, we tested our hypotheses adding entrepreneurial experience (dummy-coded) as a control variable. Although entrepreneurial experience had a negative effect on psychological detachment (b = -0.29, p = .084), such that having experience was associated with lower levels of psychological detachment, controlling for the variable did not change our results (see Table 21, Model 6).

Second, we tested whether the personal situation of the participants would change our findings. Therefore, we successively tested our hypotheses controlling for *relationship status* (dummy-coded), having underaged *children* living in the same household (dummy-coded), and working as a founder only in *part-time* (dummy-coded). None of these variables had a significant effect on psychological detachment (relationship status: b = 0.02, p = .901; children: b = -0.08, p = .715; part-time: b = 0.33, p = .057) or changed our results (see Table 21, Model 7).

Third, for the final model (Model 5), we tried to be both parsimonious with the inclusion of control variables and still sufficiently include those control variables that are most relevant in terms of affecting detachment directly or the hypothesized effects in order to ensure that the fixed effects did not get significant due to the control variables included (Sturman et al., 2022). To rule out the possibility that the tested effects were not confounded by the control variables included, we ran our model *without any control variables* as suggested by Sturman et al. (2022). Our findings remained robust (see Table 21, Model 8).

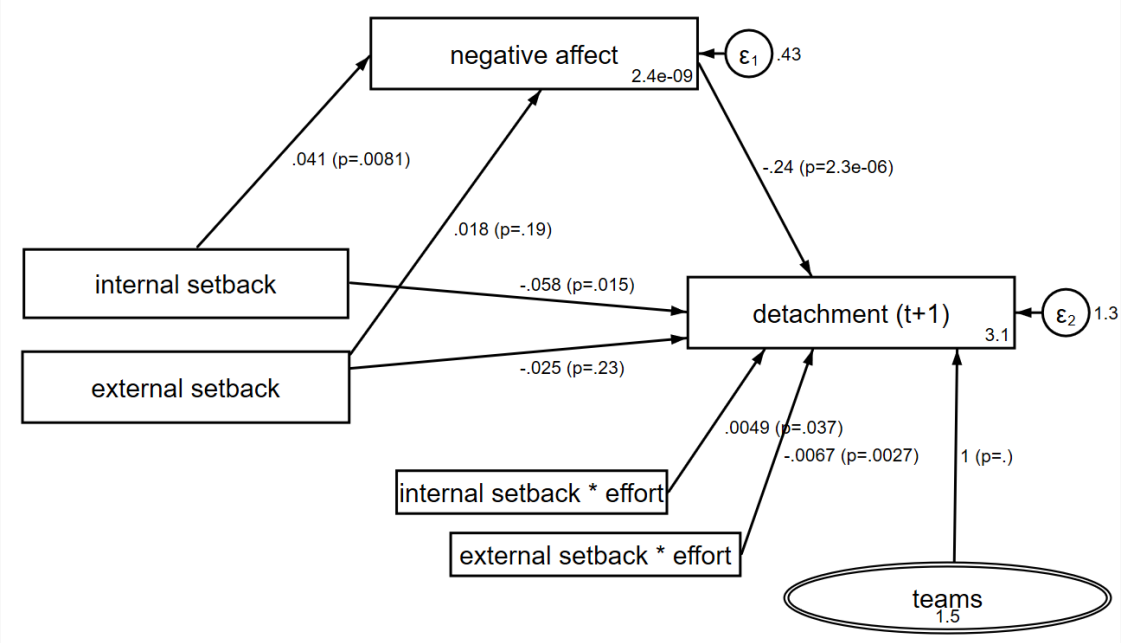
Fourth, given that theory suggests an association of psychological detachment with *stress* (Sonnentag & Fritz, 2015), we measured entrepreneurs' general level of stress (4 items with response scale from 1 (*not at all*) to 7 (*completely*), e.g., "I feel a great deal of stress

because of my work.", Motowidlo et al., 1986) in the first questionnaire (see Appendix 5, for the items). Cronbach's alpha was 0.86. Although entrepreneurs' general level of stress was significantly negatively associated with weekly psychological detachment (*b* = -0.15; *p* = .020), our results did not change substantially when including stress as an individual-level control variable (see Table 21, Model 9).

Fifth, to rule out the possibility that general venture performance may be confounded with entrepreneurs' levels of psychological detachment, we included a dummy variable indicating if the venture already generated revenues as a proxy for *objective venture performance* (see Appendix 6, for the item). Revenues had no significant effect on psychological detachment (*b* = -0.10; *p* = .635) and our results remained stable including this control variable (see Table 21, Model 10).

Sixth, we wanted to account for the possibility that *positive and negative affect* mediated the effects of setbacks on detachment as prior literature finds affect as a predictor of detachment (Sonnentag & Lischetzke, 2018) and negative affect was used as a control variable because it may affect evaluations of detachment (Sonnentag, Binnewies, & Mojza, 2010). Therefore, we computed a multilevel structural equation model with Stata. We modelled internal and external setbacks (t) as predictors of positive and/ or negative affect in the following week (t+1) (measured with 10 items from Thompson, 2007; see Appendix 5, for the items), which was then modelled as a predictor of detachment (t+1). As displayed in Figure 14, results reveal that negative affect indeed mediated the effect of *internal setbacks* on detachment. However, negative affect did not mediate the effect of *external setbacks* on detachment. These findings confirm the analyses of direct effects in which only internal setbacks led to more negative affect (Est = 0.04, *p* = 0.002), wheras external setbacks did not have a significant effect on subsequent negative affect (Est = 0.02, *p* = 0.246). Neither internal setbacks nor external setbacks were significantly related to subsequent positive affect (Est = 0.01, *p* = 0.701 for internal setbacks; Est = -0.01, *p* = 0.339 for external setbacks).

Figure 14. Structural equation model for mediation of positive and negative affect



Seventh, to account for the possibility that *equity ownership* (retrieved from the interviews of the first round in the BEST study) changes the levels of psychological detachment, we calculated the full model with equity ownership as a control variable. Indeed, those individuals with equity have more difficulty detaching from their work (Est = -1.19, p = 0.033) (see Table 22, Model 12). As there are only few participants without equity (N = 5), the findings should be interpreted with caution.

Table 20. Summary of findings of robustness tests

	Main findings	Change of results
Additional control variables		
Entrepreneurial experience [a]	Est = -0.29, p = 0.084 (Model 6)	No
Equity ownership [b]	Est = -1.19, p = 0.033 (Model 12)	No
Personal situation	relationship status: Est = 0.02, p = 0.901 children: Est = -0.08, p = 0.715 part-time: Est = 0.33, p = 0.057 (Model 7)	No

	Main findings	Change of results
Perceived venture performance (cgm)	Est = -0.17, p = 0.032 (Model 13)	No
Revenues [c]	Est = -0.10, p = 0.635 (Model 10)	No
Team performance (cgm)	Est = -0.01, p = 0.937 (Model 14)	No
Stress (cgm)	Est = -0.15, p = 0.020 (Model 9)	No
Alternative model configurations		
No control variables (see Becker et al., 2016)	As in Model 5, effect of external setbacks (t) on detachment (t+1) not significant (p = 0.222) (Model 8)	No (p-values closer to zero)
Affect as mediator	Negative affect mediates effect of internal setbacks on detachment but not of external setbacks; no mediation effect with positive affect (Figure 14)	No
Standard errors not robust	None (Model 11)	No
Modelling random slopes		
Internal and external setbacks as random slopes	Variance slope internal setback: Est. = 0.01, CI = [0.003; 0.055] Variance slope external setback: Est. = 0.0, CI = [0.0; 0.0] Random intercept model vs. random slopes model: LR Chi^2 = 2.11, p = 0.348	No
Effort as random slope	Variance slope effort: Est. = 0.0, CI = [0.0; 0.001] Random intercept model vs. random slope model: LR Chi^2 = 1.36, p = 0.243	No

Notes: CI = 95% confidence interval. [a] 0 = no prior entrepreneurial experience, 1 = has at least founded one other venture prior to the current one. [b] Data for ownership variable were retrieved from interview transcripts. 0 = no equity (N = 5); 1 = equity (N = 232) or no information (N = 20). [c] 0 = venture is not generating revenues, 1 = venture is generating revenues.

Eighth, in terms of *perceived performance* (i.e., perceived venture performance, team performance), perceived venture performance (measured with 8 items by Clercq & Sapienza, 2006; see Appendix 6, for the items) showed a significant negative effect on detachment (Est = -0.17, p = 0.032) but did not affect the fixed effects (see Table 22, Model 13). This finding is worth noting because even though both venture performance and setbacks are reversely related to venture progress, they seem to both affect detachment in a negative, such that high levels of venture performance and high levels of internal setbacks (conceptually related to *low* performance) impede detachment. It is

noteworthy, though, that the temporal periods differ: While setbacks refer to weekly, short-term events, performance refers to the general perception thereof. Importantly, our results remain stable when we control for perceived venture performance. Team performance (measured with 4 items by Shaw et al., 2011; see Appendix 6, for the items) was not significantly associated with detachment (Est = -0.01, p = 0.937) and did not affect the fixed effects in our model (see Table 22, Model 14).

Ninth, modelling our hypothesized model *without robust standard errors* did not affect our findings (see Table 22, Model 11).

Finally, we tested whether modelling internal and external setbacks or effort as *random slopes* would provide a better fit to the data. A common method to compare different nested models is the Loglikelihood Ratio (LR) test. Specifically, we used the LR test to compare whether a random intercept, random slope model (internal and external setbacks or effort as random slope[s]) fits the data better than a random intercept, fixed slope model – which is the model we hypothesized (i.e., Table 16, Model 5) – that is nested in a more extensive random intercept, random slope model. A significant result of the LR test indicates that the more extensive model with random slopes fits our data better than the random intercept, fixed slope model. Findings reveal that model fit was not better for the models with random slopes (i.e., LR Chi^2 were not statistically significant), neither for internal and external setbacks (LR Chi^2 = 2.11, p = 0.348) nor effort (LR Chi^2 = 1.36, p = 0.243) (see Table 20). Therefore, we conclude that the more parsimonious random intercept model fits our data better. This conclusion based on statistical reasoning also fits our theoretical considerations as outlined in chapter 3.2.

Table 21. HLM results of robustness tests (1)

	Model 6			Model 7			Model 8			Model 9			Model 10		
	Est	SE	z	Est	SE	z	Est	SE	z	Est	SE	z	Est	SE	z
Intercept	3.20	0.16	20.65**	2.94	0.20	14.50**	3.08	0.09	34.60**	3.05	0.12	25.98**	3.12	0.21	15.07**
Week of study (t)	0.00	0.01	0.19	0.00	0.01	0.21				0.00	0.01	0.19	0.00	0.01	0.20
Hours after invitation (t)	0.00	0.00	-0.09	0.00	0.00	-0.16				0.00	0.00	-0.06	0.00	0.00	-0.09
Detachment (t)	0.10	0.02	4.25**	0.10	0.02	4.25**				0.10	0.02	4.24**	0.10	0.02	4.25**
Internal setback (t)	-0.06	0.02	-2.76**	-0.06	0.02	-2.77**	-0.07	0.02	-2.81**	-0.06	0.02	-2.76**	-0.06	0.02	-2.76**
External setback (t)	-0.03	0.02	-1.21	-0.03	0.02	-1.21	-0.03	0.02	-1.22	-0.03	0.02	-1.21	-0.03	0.02	-1.21
Effort (t)	-0.01	0.00	-2.70**	-0.01	0.00	-2.70**	-0.01	0.00	-3.48**	-0.01	0.00	-2.70**	-0.01	0.00	-2.70**
Internal setback (t) x effort (t)	0.01	0.00	2.13*	0.01	0.00	2.13*	0.01	0.00	2.16*	0.01	0.00	2.14*	0.01	0.00	2.14*
External setback (t) x effort (t)	-0.01	0.00	-3.42**	-0.01	0.00	-3.39**	-0.01	0.00	-3.37**	-0.01	0.00	-3.38**	-0.01	0.00	-3.40**
Age	0.01	0.01	0.70	0.00	0.01	0.21				0.00	0.01	0.11	0.00	0.01	0.40
Gender[a]	0.06	0.26	0.23	0.10	0.25	0.40				0.14	0.25	0.55	0.16	0.26	0.60
Venture age	-0.07	0.07	-0.92	-0.06	0.07	-0.82				-0.05	0.07	-0.64	-0.05	0.07	-0.64
Venture size	0.00	0.01	0.01	0.00	0.01	0.21				0.00	0.01	-0.08	0.00	0.01	-0.06
Entrepreneurial experience [b]	-0.29	0.17	-1.73												
Relationship status [c]				0.02	0.19	0.12									
Children [d]				-0.08	0.23	-0.37									
Part-time [e]				0.33	0.17	1.90									
Stress (person-level)										-0.15	0.07	-2.33*			
Revenues [f]													-0.10	0.21	-0.47
- Log Pseudolikelihood	3632.51			3632.30			3644.01			3630.70			3633.78		

	Model 6			Model 7			Model 8			Model 9			Model 10		
	Est	SE	z	Est	SE	z	Est	SE	z	Est	SE	z	Est	SE	z
Wald chi²	57.48**			57.83**			34.58**			59.67**			56.63**		
df	17			19			9			17			17		
AIC	7299.02			7302.59			7306.01			7295.39			7301.56		
Person-level ICC	0.53	0.03		0.53	0.03		0.53	0.03		0.52	0.03		0.53	0.03	
Venture-level ICC	0.07	0.05		0.06	0.06		0.07	0.05		0.08	0.05		0.07	0.05	

Notes. Est = unstandardized estimate. SE = robust standard error. AIC = Akaike Information Criterion. [a] 0 = male, 1 = female. [b] 0 = no prior entrepreneurial experience, 1 = has at least founded one other venture prior to the current one. [c] 0 = no partner, 1 = has a partner. [d] 0 = no children, 1 = has children. [e] 0 = working full-time for venture, 1 = working part-time for venture. [f] 0 = venture is not generating revenues, 1 = venture is generating revenues. * $p \leq 0.05$; ** $p \leq 0.01$.

Table 22. HLM results of robustness tests (2)

	Model 11			Model 12			Model 13			Model 14		
	Est	SE [d]	z	Est	SE	z	Est	SE	z	Est	SE	Z
Intercept	3.05	0.11	27.78**	4.23	0.56	7.55**	3.05	0.12	25.75**	3.05	0.12	25.68**
Week of study (t)	0.0	0.01	0.27	0.0	0.01	0.22	0.0	0.01	0.22	0.0	0.01	0.2
Hours after invitation (t)	0.0	0.0	-0.08	0.0	0.0	-0.07	0.0	0.0	-0.12	0.0	0.0	-0.1
Detachment (t)	0.10	0.02	4.35**	0.10	0.02	4.24**	0.10	0.02	4.25**	0.10	0.02	4.25**
Internal setback (t)	-0.06	0.02	-2.98**	-0.06	0.02	-2.76**	-0.06	0.02	-2.77**	-0.06	0.02	-2.76**
External setback (t)	-0.03	0.02	-1.15	-0.03	0.02	-1.21	-0.03	0.02	-1.21	-0.03	0.02	-1.21
Effort (t)	-0.01	0.0	-2.96**	-0.01	0.0	-2.70**	-0.01	0.0	-2.7**	-0.01	0.0	-2.70**
Internal setback (t) x effort (t)	0.01	0.0	2.51*	0.01	0.0	2.14*	0.01	0.0	2.13*	0.01	0.0	2.14*
External setback (t) x effort (t)	-0.01	0.0	-3.33**	-0.01	0.0	-3.40**	-0.01	0.0	-3.41**	-0.01	0.0	-3.41**
Age	0.0	0.01	0.36	0.01	0.01	0.66	0.0	0.01	0.29	0.0	0.01	0.36
Gender [a]	0.15	0.25	0.62	0.02	0.22	0.11	0.16	0.27	0.59	0.15	0.27	0.57
Venture age	-0.06	0.07	-0.79	-0.07	0.07	-0.92	-0.08	0.07	-1.13	-0.06	0.07	-0.81

	Model 11			Model 12			Model 13			Model 14		
	Est	SE [d]	z	Est	SE	z	Est	SE	z	Est	SE	Z
Venture size	0.0	0.01	-0.08	0.0	0.01	-0.11	0.01	0.01	0.43	0.0	0.01	-0.08
Equity ownership [b]				-1.19	0.56	-2.14*						
Perceived venture performance [c]							-0.17	0.089	-2.15*			
Team performance [c]										0.01	0.13	-0.08
- Log Pseudolikelihood	3633.89			3632.199			3631.168			3633.887		
Wald chi²	64.26**			57.91**			68.43**			59.00**		
df	16			17			17			17		
AIC	7299.78			7298.397			7296.336			7301.773		
Person-level ICC	0.53	0.03		0.53	0.03		0.53	0.03		0.53	0.03	
Venture-level ICC	0.07	0.05		0.08	0.05		0.07	0.05		0.07	0.05	

Notes: Est = unstandardized estimate. SE = standard error. AIC = Akaike Information Criterion. [a] 0 = male, 1 = female. [b] 0 = no equity (N = 5); 1 = equity (N = 232) or no information (N = 20). [c] Perceived venture performance and team performance were centered at the grand-mean. [d] SEs in Model 11 were not robust. Model 12-14 are calculated with robust SEs to rule out problems of heteroscedasticity of residuals. * $p \leq 0.05$; ** $p \leq 0.01$.

3.4.5 Post hoc analyses

We performed five post hoc analyses to examine (i) whether the effect sizes of internal setbacks on detachment and of external setbacks on detachment differed statistically, (ii) if detachment leads to lower levels of involvement with the venture, (iii) whether internal setbacks affect subsequent external setbacks and/ or vice versa, (iv) whether average levels of internal and/ or external setbacks are associated with perceived venture performance, and (v) whether the model estimators differed between participants who stayed in the venture and those who left the venture two years later.

First, descriptively, internal setbacks (t) are more negatively related to entrepreneurs' subsequent level of psychological detachment (t+1) compared to external setbacks (t). To test whether these effect sizes statistically differ, we compared the effect size of internal setbacks on subsequent psychological detachment with the effect size of external setbacks on subsequent psychological detachment by subtracting the effect size of external setbacks from the one of internal setbacks. We tested for statistical difference using the *lincom* command from Stata (StataCorp, 2015) after modeling the full model. The lincom command is appropriate to evaluate the difference between linear combinations of parameters (StataCorp, 2013). Results reveal a non-significant effect in the expected positive direction (*Est* =0.04, p = .237). Thus, the effect sizes of internal setbacks on detachment and of external setbacks on detachment do not differ statistically significantly.

Second, we examined whether psychological detachment means that founders disengage from the venture (see Rouse, 2016). Therefore, We calculated the effect of psychological detachment (t, cpm) on effort in the subsequent week (t+1) as a proxy for founders' involvement with their venture (M. A. Clark et al., 2016; Gielnik et al., 2015). Findings reveal that detachment indeed had a significant effect on subsequent effort (Est =-0.57; SE = 0.22, p = 0.008). However, when controlling for effort (t, cpm), only effort (Est =0.15; SE = 0.04, p < 0.001) but not detachment (Est =-0.25; SE = 0.20, p = 0.221) was a significant predictor of subsequent effort. Thus, detachment appears to be no predictor of subsequent effort when controlling for effort in the previous week. Accordingly, low levels of detachment do not necessarily mean that entrepreneurs also invest less efforts

in their venture nor that they disengage from the venture. This finding also underpins our definition of detachment, which can be personally beneficial for the entrepreneur without involving a form of disengagement from the venture.

Third, we examined whether (i) internal setbacks negatively affected external setbacks and (ii) external setbacks negatively affected internal setbacks. Indeed, internal setbacks (t, cpm) statistically significantly affected external setbacks in the subsequent week (t+1) (Est =0.06; SE = 0.02, p = 0.011), even when controlling for the level of external setbacks in the previous week (t, cpm) (Est =0.06; SE = 0.02, p = 0.016 for internal setbacks; Est =0.01; SE = 0.03, p = 0.818 for external setbacks). In contrast, results do not reveal a statistically significant, negative effect of external setbacks (t) on subsequent internal setbacks (t+1) (Est =-0.01; SE = 0.02, p = 0.658) when controlling for the level of internal setbacks in the previous week (t, cpm) (b = 0.10; SE = 0.03, p = 0.002). Thus, while internal setbacks negatively affect subsequent levels of external setbacks, external setbacks seem to have no impact on subsequent levels of internal setbacks. I discuss implications of this finding for future research in chapter 4.2.3.

Fourth, we examined the extent to which average levels of internal setbacks and external setbacks affected general venture performance (Clercq & Sapienza, 2006). Examining the association of setbacks and performance could both capture the idea of severity of setbacks and provide an idea of long-term consequences of setbacks. Results from a regression analysis reveal that person-mean values of internal setbacks did not have a statistically significant effect on venture performance (Est = -0.12; SE = 0.09, p = 0.198). However, person-mean levels of external setbacks had a statistically significant effect on venture performance (Est = -0.19; SE = 0.09, p = 0.035), such that the lower the levels of external setbacks the higher the venture's general performance. Thus, only person-average levels of external setbacks were negatively associated with perceived venture performance, while person-average levels of internal setbacks were not.

Fifth, to test whether the main variables in our model differed between participants who exited their team later (i.e., until two years after the initial data collection), we calculated t-tests. As the results in Table 23 indicate, only effort differed significantly in the two

groups, such that those participants that later left the venture had lower mean levels of effort (t = 3.13, p = 0.002).

Table 23. T-test for team member exit

Variable	Mean (no exit)	Mean (exit)	t-value	p-value [a]
Detachment (person-mean)	3.07	3.06	0.06	0.955
Internal setback (person-mean)	2.47	2.52	-0.33	0.738
External setback (person-mean)	2.45	2.44	0.09	0.931
Effort (person-mean)	49.14	40.81	3.13	0.002

Note: [a] We tested the hypothesis that the difference between the mean of participants that did not leave the venture and the mean of participants that left the venture was unequal 0.

3.5 Discussion

This study set out to understand how entrepreneurs' psychological detachment is affected by the setbacks that entrepreneurs face on their entrepreneurial journey. Consistent with our theorizing based on the stressor-detachment model, our findings show that internal setbacks reduce psychological detachment in the following week. Unexpectedly, we did not find support for a negative effect of external setbacks on detachment. Based on attribution theory, we theorized and found that effort moderates the relationship between the type of setback and detachment in opposing ways: Low levels of effort increased the negative effect of internal setbacks on detachment, which we attribute to entrepreneurs blaming themselves for not taking responsibility for their venture in a more controllable situation. In contrast, high levels of effort led to external setbacks having a more negative impact on detachment, which we suggest is based on entrepreneurs' perceptions of their efforts to be futile, evoking feelings of helplessness in less controllable situations.

3.5.1 Implications for research and practice

Our study theoretically contributes to the literature in several ways. First, we shed light on the consequences of setbacks for entrepreneurial well-being, thereby extending the

emerging literature on entrepreneurial setbacks (Engel et al., 2021; Funken et al., 2020; Rauter et al., 2018; Uy et al., 2021). While some scholars have already acknowledged that entrepreneurial setbacks affect entrepreneurs psychologically (Engel et al., 2021; Funken et al., 2020; Khanin & Turel, 2015; Stoverink et al., 2020; Uy et al., 2021), our study demonstrates that setbacks can also affect their well-being, but only when they relate to internal and not to external stakeholders. Thus, the impact of setbacks on well-being in general, and psychological detachment specifically, is contingent on the type of setback.

Although we assumed internal and external setbacks to follow a similar pattern in relation to detachment, the distinction in terms of controllability may serve as an explanation for the differential impact on detachment. In particular, based on our reasoning that entrepreneurs perceive internal setbacks as more controllable, entrepreneurs may feel more responsible for internal setbacks than for external setbacks (J. Lee et al., in press), resulting in decreasing levels of detachment in the week following internal setbacks. This explanation is consistent with a study that finds that individuals react with different neural responses after being exposed to controllable versus uncontrollable setbacks in a lab experiment (Bhanji & Delgado, 2014). In contrast, entrepreneurs can "blame factors beyond their control" (Eggers & Song, 2015, p. 1788) for the occurrence of external setbacks, which may be the reason why external setbacks were less likely to reduce detachment. Therefore, controllability of the setback experienced may be an important construct to consider in further theorizing on how different types of entrepreneurial setbacks impact entrepreneurs' psychological functioning and well-being.

Second, we expand the literature on entrepreneurial well-being (Shir et al., 2019; Stephan, 2018; Wiklund et al., 2019; Stephan et al., in press) by exploring entrepreneurial detachment as an understudied, yet important well-being outcome, which can increase entrepreneurs' ability to recover from work and work-related stressors (Sonnentag & Fritz, 2015; Wach et al., 2021). In particular, we identify internal setbacks as major work stressors that compromise entrepreneurs' detachment. We thereby address calls to investigate well-being constructs as important non-monetary outcomes of entrepreneurial endeavors (Hatak & Zhou, 2021; D. A. Shepherd, Wennberg, et al., 2019).

By applying the stressor-detachment model to the entrepreneurship context, we also add more broadly to the literature on organizational behavior, which primarily builds on research with employees (e.g., Chawla et al., 2020; Y. Park & Fritz, 2015). However, entrepreneurs' reactions to setbacks may differ from those of employees because entrepreneurs are likely to be highly involved with their work (Stephan, 2018), often view their ventures as their babies (Cardon et al., 2005), and "are also responsible for the downside of their actions" (Stephan et al., in press, p. 6). Indeed, our study suggests that the entrepreneurs' attributions around setbacks might represent relevant contingencies for applying the stressor-detachment model to this context.

Finally, we add to the conversation on entrepreneurial effort, which has indicated that higher effort increases the chances of venture success (Uy et al., 2015), fuels entrepreneurial passion (Gielnik et al., 2015), drives persistence (Cardon & Kirk, 2015; Laffineur et al., 2020), and can be a way to navigate through unpredictable, uncertain circumstances (Gielnik et al., 2015; Uy et al., 2015). We challenge this predominantly positive view of entrepreneurial effort by showing that effort can also have its downsides for well-being in the light of entrepreneurial setbacks. While our study shows that, when internal setbacks occur, investing more effort helps mitigating the setbacks' negative impact on psychological detachment, in the case of external setbacks, when entrepreneurs perceive their effort to be futile, they are less likely to detach after having invested more effort. Indeed, this view of effort as a contingency factor impeding detachment is consistent with theoretical (Baumeister & Vohs, 2007; Meijman & Mulder, 1998) and empirical findings of research in organizational behavior (e.g., Clinton et al., 2017; Volmer et al., 2012). Our findings thus reconcile prior, predominantly positive, perceptions of effort in the entrepreneurship literature with prior, predominantly negative perceptions in the organizational behavior literature. Our study suggests that attributions can play an important role in contextualizing effort and acknowledging its potentially positive or negative effect on entrepreneurial well-being and, by extension, venture performance (Stephan, 2018).

Our study also has practical implications for entrepreneurs as well as entrepreneurship educators and coaches seeking strategies to deal with entrepreneurial setbacks or to support entrepreneurs experiencing setbacks. Our findings highlight that entrepreneurs who

experience setbacks with respect to internal stakeholders are particularly likely to face difficulties detaching from work; thus, it might be helpful for them to limit the time reflecting about the setback, in particular when they have invested low levels of effort, to avoid excessive rumination that will undermine their well-being. In contrast, entrepreneurs who experience setbacks with respect to external stakeholders and invested high levels of effort might benefit from acknowledging that their effort could still be helpful in the future allowing them to regain a feeling of responsibility. In these situations, it might also help entrepreneurs to consider recovery strategies (Williamson et al., 2021), such as meditation (Engel et al., 2021), to allow themselves detach from work.

3.5.2 Limitations and future research

Our study has limitations, which give rise to future research opportunities. First, while our measure of internal and external setbacks allowed us to differentiate between important types of setbacks, it did not allow us to account for the gravity of the (different types of) setbacks (Funken et al., 2020; Uy et al., 2021). Future research could have entrepreneurs assess the gravity of the setbacks, or the extent to which such setbacks impeded venture progress. Also, future research could provide more fine-grained insights into how the nature of the setbacks affects well-being. While our study differentiated between internal and external setbacks, a more detailed assessment of the setbacks would allow for understanding whether the impact differs for the specific stakeholder the setback is related to (for instance, do setbacks related to the functioning of the entrepreneurial team have a different impact than those related to employees?).

Second, we followed new ventures for a limited period of 12 weeks. While we carefully decided for this study design based on both methodological (McCormick et al., 2020) and conceptual considerations (Binnewies et al., 2010; Funken et al., 2020; Gielnik et al., 2015), future studies may accompany teams for a longer trajectory to examine the influence of major events, such as the next financing round or team member exits, for our model. Following teams for a longer period may also enable researchers to investigate cases of venture failure and thereby connect the literatures of entrepreneurial setbacks and failure (e.g., Jenkins et al., 2014).

Last, we theorized on attributions following setbacks related to internal and external stakeholders. We built on attribution theory and relied on an extensive body of work providing the theoretical foundation of why attribution processes are likely to occur following entrepreneurial setbacks (Douglas et al., 2008; Harvey et al., 2014; Weiner, 1985) and why internal and external setbacks are likely to differ in terms of controllability (e.g., Eggers & Song, 2015; Martinko et al., 2011; Weiner, 1985). Consistent with numerous studies following attribution theory (e.g., Breugst & Shepherd, 2017; J. Lee et al., in press; Nielsen & Sarasvathy, 2016; Williamson et al., in press), we did not directly measure the entrepreneurs' attributions of these setbacks in combination with effort. We did so because measuring and testing of cognitive processes, such as attribution, in an unambiguous way is extremely difficult (J. Lee et al., in press). Furthermore, we wanted to avoid any external influence or bias on the entrepreneurs' thought processes and reflections about these setbacks, which questions related to the attribution could invoke. However, future research could complement our findings and try to capture the entrepreneurs' interpretation of setbacks in a more nuanced way (e.g., Mantere et al., 2013).

3.6 Conclusions

Our study contributes to a better understanding of when setbacks with respect to internal and external stakeholders affect entrepreneurs' psychological detachment. We find that particularly internal setbacks impede subsequent detachment. Moreover, consistent with our theorizing, high levels of effort can mitigate this relationship. In contrast, under high levels of effort, external setbacks impede the entrepreneurs' subsequent detachment. These findings suggest that it might be insightful to infuse the stressor-detachment model with notions from attribution theory and they also challenge the predominantly positive view on entrepreneurial effort.

4 Summary of findings and theoretical contributions, avenues for future research, and practical implications

4.1 Summary of findings and theoretical contributions

I began this dissertation with the question whether entrepreneurs psychologically detach from their work – and if they do, under which circumstances psychological detachment is more likely. The expectations and pressures to working hard are very pronounced among entrepreneurs, constituting an "always-on" mentality. Indeed, the literature on organizational behavior highlights that the expectations regarding work-life boundaries influence individuals' psychological detachment (Belkin et al., 2020; Foucreault et al., 2018; Hahn & Dormann, 2013; Kinnunen et al., 2016; Y. Park et al., 2011), such that, for instance, the expectations to be available for work-related matters during non-work time can impede individuals' detachment (Belkin et al., 2020). As highlighted in the Introduction (chapter 1.1), considering the weak boundaries between work and private lives for entrepreneurs and the expectations to hardly switch off from work, the entrepreneurship context constitutes a special conceptual background, which calls for examining psychological detachment particularly among entrepreneurs (Williamson et al., 2021). Specifically, knowing the factors impeding or reinforcing psychological detachment seems to be important as the literature suggests that psychological detachment is associated with well-being (Taris et al., 2008; Wach et al., 2021), which is both a personal resource for the entrepreneur and an important antecedent for entrepreneurial success (Stephan, 2018).

Therefore, the purpose of this dissertation is to create a better understanding of psychological detachment from work in the entrepreneurship context. The goals of this dissertation are twofold. First, in a systematic literature review, I investigated the current state of research on psychological detachment from work and discussed opportunities for future research in the literatures of both entrepreneurship and organizational behavior. Second, in a week-level longitudinal study with entrepreneurs, I focused on psychological detachment as an outcome and investigated the effects of entrepreneurial setbacks and effort on subsequent levels of detachment. In the following, I highlight the most

important and intriguing findings of these two studies and integrate these findings to synthesize knowledge gathered throughout this dissertation.

4.1.1 Summary of findings on the importance of psychological detachment

In the literature review, I synthesized knowledge around the definition, methodology, nomological network, and theoretical perspectives surrounding psychological detachment from work. Psychological detachment can occur at any time in which individuals are not formally occupied with work-related matters, which is why the literature examines psychological detachment during non-work time intervals spanning durations from work breaks (Rhee & Kim, 2016) to sabbaticals (Davidson et al., 2010). The literature views detachment as a distinct construct that differs from related constructs, such as rumination, work reflection, or disengagement from the venture.

Because the levels of psychological detachment fluctuate highly within persons, many scholars use day-level diary research designs and capture detachment with the Recovery Experience Questionnaire (Sonnentag & Fritz, 2007b) as the main measurement instrument. With some exceptions of studies that consider, for instance, the partner (e.g., Hahn, Binnewies, & Haun, 2012; Hahn & Dormann, 2013), most studies on detachment focus only on the individual as the level of analysis. Most studies rely on employees as study participants. Due to entrepreneurs' high work involvement (Cardon et al., 2005; Cardon et al., 2009), identification with their ventures (Hoang & Gimeno, 2010; Murnieks & Mosakowski, 2007; Stephan, 2018), and their personal economic dependency on the venture's success, these findings should only be transferred to entrepreneurs with caution (Williamson et al., 2021).

Structured into thematic perspectives, I summarized the examined antecedents and outcomes of detachment in an extensive nomological network (chapter 2.3.3). These thematic perspectives are behaviors, individual dispositions, mental and physical health, work situation, work motivation, work performance, and work-home interface. Most frequently, the literature investigates mental and physical health, behavior, and the work situation, which also resonates in the theory of the stressor-detachment model (Sonnentag & Fritz, 2015). In particular, the findings from the literature review highlight that job

demands (e.g., workload) have a negative impact on detachment, but the reactions to these job demands can be alleviated with recovery training (Hahn et al., 2011). Moreover, the review emphasizes the positive effects of detachment on psychological well-being, covering both eudaimonic (e.g., life satisfaction) and hedonic well-being (e.g., vigor), as well as the work-home interface (e.g., relationship satisfaction). The few studies on the effects of detachment on work performance reveal mixed results (Binnewies et al., 2010; Fritz, Yankelevich, et al., 2010; Guo & Zhu, 2019). In terms of the role of detachment as a contingency factor, findings confirm the moderator role of detachment, such that psychological detachment can buffer the detrimental effects of job demands or work stressors on well-being (Blanco-Donoso et al., 2017; Lu & Chou, 2020; Sianoja et al., 2018; Taris et al., 2008).

In general, these empirical findings provide support for the validity of the stressor-detachment model as the main theoretical perspective in relation to psychological detachment. Other theoretical perspectives include stress and recovery, emotion, motivation, identity, and environment, which are frequently considered in combination to theorize for research models.

4.1.2 Theoretical implications from setbacks-detachment study

In order to understand how entrepreneurs psychologically deal with entrepreneurial setbacks as frequent negative events throughout the entrepreneurship process, we conducted a week-level longitudinal study with 257 entrepreneurs. We find that internal setbacks, as expected, act as work stressors that compromise entrepreneurs' psychological detachment from work one week later. This relationship is stronger when entrepreneurs invested low levels of effort during the week in which the setback occurred. However, we also find that external setbacks only negatively influence subsequent levels of detachment when the entrepreneur invested high levels of effort.

These findings are intriguing for the entrepreneurship literature because they show that entrepreneurial setbacks can affect entrepreneurs' subsequent psychological detachment, which adds to the emerging understanding of those factors impeding entrepreneurs' psychological detachment (Kollmann et al., 2019; Murnieks, Arthurs, et al., 2020; Wach et

al., 2021). Our results are also important for the literature on organizational behavior because we show that entrepreneurs as a group of highly committed and involved individuals follow a similar pattern as employees when it comes to setbacks with regard to internal stakeholders, thereby providing support for the stressor-detachment model (Sonnentag & Fritz, 2015). At the same time, our model emphasizes the need to integrate theoretical contingencies in relation to attribution theory in the stressor-detachment relationship when being applied to the entrepreneurship context.

Our research design adopts the perspective of entrepreneurship as a dynamic, social process (Dimov, 2007), because we captured the weekly fluctuations of different levels of setbacks, effort, and psychological detachment by following entrepreneurs over a trajectory of 12 weeks. By capturing these weekly fluctuations, we followed calls for more research considering timely and process-related changes (Lévesque & Stephan, 2019; Stephan et al., in press). With our research design, we also add to the literature on organizational behavior by showing that although psychological detachment has usually been examined in diary studies at the day-level (e.g., Wach et al., 2021), it can also be examined at the week-level. Our data show that detachment also fluctuates from week to week with a considerably high within-person variance of 47.6% and thereby extend the predominant day-level research design, applied in studies on organizational behavior, to the week level. Responding to calls for longitudinal studies on entrepreneurial well-being (Stephan, 2018; Stephan et al., in press), with our research design, we accounted for fluctuations within persons in the perception of setbacks as well as psychological detachment.

While we did not theoretically argue for potential direct effects of effort on subsequent psychological detachment, our analyses reveal a negative main effect of effort on detachment (see Table 16, Model 5). This finding is consistent with prior research showing an association of workload with low levels of recovery and well-being (Bennett et al., 2018; Meier & Cho, 2019; Meijman & Mulder, 1998; Sonnentag & Kruel, 2006; Sonnentag, Kuttler, & Fritz, 2010). Furthermore, this finding adds to a conversation adopted in a recent study, which finds that weekly working hours are positively related to monetary success but negatively to non-monetary success (Hatak & Zhou, 2021).

4.1.3 Meaning of psychological detachment for entrepreneurs

This dissertation contributes to the emerging literature stream on entrepreneurial well-being by showing that psychological detachment from work is important for individuals to experience well-being in the short- (Brummelhuis & Bakker, 2012b; Clinton et al., 2017; Y.-R. Wang et al., 2019) and long-run (Sonnentag, Binnewies, & Mojza, 2010; Thiele Schwarz, 2011), to stay healthy (Wendsche & Lohmann-Haislah, 2017), happy (Fritz, Yankelevich, et al., 2010; Hahn & Dormann, 2013; T. Liu et al., 2019; Sonnentag & Fritz, 2007b), and engaged (Siltaloppi et al., 2009; Sonnentag & Kühnel, 2016); and to maintain a good relationship with the partner (Jo & Lee, 2022; Rodríguez-Muñoz et al., 2017). Moreover, psychological detachment helps individuals to mitigate the detrimental effects of work stressors on well-being (Blanco-Donoso et al., 2017; Sianoja et al., 2018).

Importantly, by relying on a sample of entrepreneurs in our longitudinal study, we provide evidence that entrepreneurs also experience psychological detachment from work, as do employees. However, when descriptively comparing the mean levels of psychological detachment in our entrepreneurs sample (M = 2.99) with employees samples[18] (e.g., M = 4.35, Fritz, Yankelevich, et al., 2010; M = 4.98, Jo & Lee, 2022; M = 4.00, Sonnentag & Fritz, 2007b), the average levels of psychological detachment among entrepreneurs seem to be indeed lower than the ones among employees. This observation, for one, supports the assumption that entrepreneurs are less likely than employees to detach from work and, therefore, points to the need to examine entrepreneurial recovery among entrepreneurs specifically instead of transferring findings from research among employees (Williamson et al., 2021). For another, this adds to the literature on organizational behavior by highlighting the necessity to differentiate between different types of occupations and, as I discuss in 2.4.2, to incorporate the context into research on psychological detachment from work.

[18] The mean values referenced in the following were converted from scale ranges of 1 to 5, as applied in the original studies, to 1 to 7, as applied in our study, so that the mean values are comparable.

By studying psychological detachment as an outcome variable, we add to research conceptualizing and examining well-being variables as important stand-alone outcomes of entrepreneurship (Hatak & Zhou, 2021; D. A. Shepherd, Wennberg, et al., 2019; Wach et al., 2016; Wiklund et al., 2019). Moreover, we add to the notion of entrepreneurial health as human capital that can even be monetized (Hatak & Zhou, 2021).

4.2 Avenues for future research

This dissertation sets out to reconcile the perspectives of the scholarly fields of organizational behavior on psychological detachment from work with the entrepreneurship literature. While I highlighted above how this research contributes to these literature streams, in the following, I point to opportunities for future research for the literatures on organizational behavior, entrepreneurial well-being, and entrepreneurial setbacks.

4.2.1 Future research opportunities for organizational behavior

In chapter 2.4, I discussed potential opportunities for future research on psychological detachment in organizational behavior. In particular, I highlighted that the boundaries of psychological detachment may be reconsidered. Specifically, scholars may question the fixed conception of work where work seems to be externally imposed on individuals by any form of supervisor, rather than something that can be meaningful and is mainly subject to the individual's discretion. Moreover, the literature may benefit from considerations of potentially negative outcomes of detachment, such as reducing creativity (Weinberger et al., 2018).

Moreover, I argued that the influence of the context has been neglected in the literature, that is, the samples of employees often neglect more nuanced characteristics of certain occupations, especially entrepreneurship, and these samples also ignore the influence of social dynamics at work (e.g., co-workers but also co-founders). Future studies may also benefit from establishing new ways of operationalization and research designs (e.g., technological tracking gadgets).

Following the idea of chapter 2.4.2 on examining the influence of the context with respect to psychological detachment, adopting a family embeddedness perspective (Aldrich & Cliff, 2003) may be a fruitful area of future research. Prior literature points to the importance of the family in terms of entrepreneurial well-being (Hatak & Zhou, 2021), in particular on how entrepreneurs' well-being is affected by stressors (F. Xu et al., 2020). In our analyses, we controlled for two aspects of the family status of the entrepreneurs, that is, their relationship status and whether they had children. While these variables had no significant main effects on weekly psychological detachment, future studies may examine characteristics of the family situation as potential contingencies when it comes to different antecedent–detachment relationships.

4.2.2 Future research opportunities for entrepreneurial well-being

Entrepreneurs are usually not tied to contracts regulating and formal supervisors approving their work and non-work time, but they are rather dependent on stakeholders and their decisions, which can dictate their actions (Mitchell et al., 2021). Therefore, in the literature review, I suggested for future research endeavors to elaborate a construct definition of how entrepreneurs conceptualize and manage their non-work time (i.e., future research question 1).

As I theorize throughout this dissertation, entrepreneurship constitutes a social process (Dimov, 2007) that often requires a team of co-founders to succeed (Patzelt et al., 2021). Despite the importance of the entrepreneurial founding team, little is known as to what extent team-level characteristics and dynamics influence an entrepreneurs' psychological detachment (see future research question 2). The data from our longitudinal study suggest that the team level is important to consider when it comes to understand entrepreneurs' psychological detachment from work. Specifically, while most of the variance in psychological detachment can be explained by intraindividual fluctuations as well as differences between persons, about six percent of the variance in psychological detachment can be explained by the team (see venture-level ICC, Table 16). Agreeing on how much, when, or where entrepreneurial founding team members work may have important implications for how well they can psychologically detach in their non-work time. In contrast, if they do not agree on their conceptualizations about non-work time, conflicts can

arise within the team, which can increase the entrepreneurs' affective rumination and as a consequence reduce their well-being (Wach et al., 2021). Therefore, future research may examine the impact of the team, and more specifically, the levels of agreements versus conflicts, on entrepreneurs' psychological detachment.

Moreover, I also suggested in the literature review, that psychological detachment may be an interesting antecedent for important entrepreneurship outcomes, such as venture growth intentions and exit intentions (i.e., future research question 3). The findings from the robustness tests and post hoc analyses of our longitudinal study provide first insights into potential relations of psychological detachment with entrepreneurs' involvement, which are to be investigated thoroughly in future studies. First, a post hoc analysis reveals that psychological detachment predicted higher levels of subsequent effort (only when not controlling for the level of effort in the previous week), which can be regarded as a proxy for high involvement with the venture (M. A. Clark et al., 2016; Gielnik et al., 2015). Second, to capture the long-term perspective, in another post hoc analysis, a comparison between the average levels of psychological detachment of entrepreneurs who exited their venture two years later compared to those who stayed in the venture revealed no significant differences. However, our findings are only of descriptive nature and would need to be conducted in systematic studies. Examining these differences between entrepreneurs who quit and those who stay in the venture for an extended time period would provide important contributions for the meaning of psychological detachment among entrepreneurs, especially in relation to their venture, extending the perspective from the individual to the venture level.

4.2.3 Future research opportunities for entrepreneurial setbacks

In our longitudinal study we investigated the relationship between internal and external setbacks and psychological detachment. In a post hoc analysis, we considered potential dynamics between the different types of setbacks. Prior literature provides arguments for both directions: in terms of external setbacks on internal setbacks because, for instance, setbacks in financing rounds make team relationship conflicts more likely (Forbes et al., 2010); and in terms of internal setbacks on external setbacks because, for instance, relationship conflicts in the entrepreneurial team have negative implications for venture

performance (Jong et al., 2013). This is why we tested both directions of effects and, in particular, whether internal setbacks affect external setbacks one week later and whether external setbacks would affect subsequent internal setbacks. We find that internal setbacks indeed negatively affect subsequent levels of external setbacks. In contrast, external setbacks do not seem to affect subsequent levels of internal setbacks. These findings seem to be particularly promising in terms of revealing opportunities for future research for two reasons: First, they highlight the importance of the entrepreneurial team in terms of influencing future levels of setbacks with respect to external stakeholders, such as investors or customers. Second, because we also find in a post hoc analysis that only the average levels of *external* setbacks were negatively associated with venture performance, while the average levels of *internal* setbacks were not, future research may investigate the potential order in which negative events related to internal and external stakeholders affect the venture's performance.

4.3 Practical implications

This dissertation offers important practical implications for specific audiences. First and foremostly, these practical implications may be most beneficial for entrepreneurs dealing with the challenging entrepreneurship journey including their frequent setbacks as well as the challenges that arise from the mere fact of being an entrepreneur. Second, entrepreneurship educators, coaches, and mentors who are motivated to support entrepreneurs on their journeys or who are searching for entrepreneurship training content may appreciate these practical insights. Last, the findings from this dissertation can also serve as a foundation for the entrepreneur's partner, family, and friends to encourage the entrepreneurs in their recovery and well-being.

Entrepreneurs: Entrepreneurs are exposed to high levels of stressors and challenges, and they usually invest high levels of effort (e.g., long working hours) in their venture. While these high levels of effort are necessary especially in early phases of their ventures and can help the entrepreneurs' ventures to flourish (Uy et al., 2015), it "can leave them with little time and energy to engage in activities and experiences that allow them to recuperate and recover from work stress" (Williamson et al., 2021, pp. 1308–1309). Besides the short-term negative implications of low levels of recovery on entrepreneurs'

well-being (Taris et al., 2008; Wach et al., 2021) or higher levels of sleep problems (Gu et al., 2020; Kinnunen, Feldt, Sianoja, et al., 2017; Sianoja et al., 2018; Sonnentag & Fritz, 2007b), from a long-term perspective, low levels of recovery can also be physically draining (Stephan et al., in press). This may lead entrepreneurs to the paradoxical situation that even though they would need to engage in recovery activities to refill their energy levels, they have difficulties in doing so as the experience of work stressors impedes their recovery (Sonnentag, 2018).

To resolve this paradox, entrepreneurs can draw on an emerging body of scholarly knowledge about how to protect and improve their well-being by recovering from the challenges and stressors of the entrepreneurship process (e.g., Karabinski et al., 2021; Kotte et al., 2021; Williamson et al., 2021). Psychologically detaching from the work in their venture during breaks or vacations can be a short-term cognitive strategy for entrepreneurs to cope with the typical entrepreneurial challenges in the long run (Williamson et al., 2021). In particular, effective strategies that can support entrepreneurs' psychological detachment are receiving coaching, enhancing sleep, and mindfulness practices (Williamson et al., 2021). First, receiving coaching that triggers self-reflection processes and focuses on goals and results, can, in the short-term, increase entrepreneurs' psychological detachment (Busch et al., 2021). Second, drawing on my literature review, psychologically detaching from work can enhance sleep quality (Chen & Li, 2020; Clinton et al., 2017; H. Liu et al., 2021; Sonnentag & Fritz, 2007b), which, in turn, can be beneficial for entrepreneurs' innovative behavior (Williamson et al., 2019). As such, entrepreneurs may benefit from enhancing or maintaining healthy sleep routines. Third, the literature views mindfulness, which involves an individual's focused sense for the presence (Brown & Ryan, 2003), as a cognitive mechanism supporting individuals to psychologically detach from their work (Althammer et al., 2021; Hülsheger et al., 2014; Hülsheger et al., 2018; Michel et al., 2016). Moreover, entrepreneurs who engage in mindfulness exercises experience lower levels of exhaustion, which can impede psychological detachment (Murnieks, Arthurs, et al., 2020).

Furthermore, there are specific implications for entrepreneurs when experiencing setbacks with respect to internal or external stakeholders. Although entrepreneurial setbacks are an inherent part of every entrepreneurial journey, entrepreneurs have some degree of

freedom in how they perceive these negative events (Markman et al., 2005). Because internal setbacks impede entrepreneurs' psychological detachment in the following, entrepreneurs should take some time off to foster their detachment from work. A loving-kindness meditation, for example, was found to help entrepreneurs to enhance their self-compassion, so that they experience lower levels of fear of failure in the light of setbacks (Engel et al., 2021). Moreover, following external setbacks, which are less likely to negatively impair well-being in the following, entrepreneurs could try to utilize these negative events as opportunities to learn, as research on negative feedback suggests (Kim & Kim, 2020). In particular, learning from negative events becomes more likely when entrepreneurs involve in functional reflection processes (Cope, 2011; Danneels & Vestal, 2020), such as adopting an error mastery orientation (Funken et al., 2020). Thus, seeking strategies to detach after difficulties with internal stakeholders and using setbacks with external stakeholders as opportunities to learn may be the right fit to both protect one's well-being and still successfully cope with setbacks.

Entrepreneurship educators, coaches, and mentors: Many entrepreneurs are young and do not have much professional experience, which is why showing them strategies how to psychologically detach, in particular in response to entrepreneurial setbacks, may be a valid starting point for entrepreneurship training. The literature suggests that recovery training is indeed an effective vehicle to promote individuals' psychological detachment (Hahn et al., 2011). Meta-analytic evidence (Karabinski et al., 2021) suggests that training contents should specifically address coping strategies (e.g., "How relevant is the event? Which resources do I have?") and cover the topics of boundary management, emotion regulation, and sleep improvement in order to promote detachment. Facilitating entrepreneurs' learning of how to react to stressors, such as setbacks, and to handle the challenges involved in the entrepreneurial occupation, may equip entrepreneurs with the necessary resources to deal with adverse situations (Williamson et al., 2021).

Partner, family, and friends: While all the practical implications discussed above may also be useful knowledge for the entrepreneurs' partner, family, and friends, they may especially benefit from acknowledging the importance of their role for the entrepreneurs' detachment. Protecting and supporting an individual's detachment is important for the individuals' private lives as well, considering that individuals who experience low levels

of detachment are more prone to experiencing conflicts at home (Rodríguez-Muñoz et al., 2017), work-family conflict (Barber et al., 2019), and lower levels of relationship satisfaction (Germeys & Gieter, 2017; Rodríguez-Muñoz et al., 2017).

Specifically, this dissertation and, in particular, the literature review on detachment reveals that the partner plays an important role for promoting an individual's detachment, for example, high levels of the partner's psychological detachment from their work (Hahn et al., 2014; Hahn & Dormann, 2013), a partner's preference to segment work and private life domains (instead of integrating both domains) (Hahn & Dormann, 2013), and the partner's support in recovery (Y. Park & Fritz, 2015) have positive implications on the individual's psychological detachment. Partner, family, and friends can support individuals by promoting their preferences to set boundaries between work and private life (Foucreault et al., 2018; Hahn & Dormann, 2013; Y. Park et al., 2011), especially in terms of physical boundaries (Sonnentag, Kuttler, & Fritz, 2010). Moreover, individuals experience higher levels of psychological detachment from work when they have positive experiences with their partner (Hahn, Binnewies, & Haun, 2012). Besides the aforementioned strategies to support psychological detachment, entrepreneurs and their partners may also involve in couple coaching to enhance their psychological detachment from work (Busch et al., 2021).

5 Final conclusions

This dissertation contributes to an understanding of entrepreneurs' psychological detachment from work and how entrepreneurs' psychological detachment is affected by the experience of entrepreneurial setbacks. Drawing on an extensive literature database, I identify a nomological network of psychological detachment from work, which highlights that work stressors are likely to impede detachment and detachment, in turn, is an important antecedent of well-being, both among employees and entrepreneurs. I further find conceptual, methodological, as well as empirical gaps in the literature, and provide opportunities for future research opportunities in both the literature of entrepreneurship and organizational behavior. Building on week-level longitudinal data from entrepreneurs, I identify internal setbacks as work stressors that can impede subsequent psychological detachment; external setbacks did not predict subsequent detachment. Consistent with our theorizing, entrepreneurial effort shapes these relationships as a moderator variable, such that low levels of effort increase the negative effect of internal setbacks on detachment and, conversely, high levels of effort during weeks in which external setbacks occur have a negative effect on entrepreneurs' detachment. Therefore, this dissertation highlights the importance for individuals to psychologically detach from their work and sheds light on how entrepreneurial setbacks as frequent negative events can act as work stressors impeding detachment.

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Note: References marked with an asterisk indicate studies included in the review.

Appendix

Appendix 1. Excluded journals from literature review

Reason for exclusion	Excluded journal
Non-English	Acta Universitatis Danubius: Oeconomica
	Anales de Psicologia
	Arquivos Brasileiros de Endocrinologia e Metabologia
	Estudios de Psicologia
	Psicologica
	Psychologica Belgica
	Revista de Psicologia del Deporte
	Studia Psychologica
	Zeitschrift für Arbeits- und Organisationspsychologie
	Zeitschrift für Personalforschung
	Zeitschrift für Psychologie/Journal of Psychology
Off-topic	Aviation Psychology and Applied Human Factors
	Child abuse & neglect
	Early Childhood Education Journal
	Educational Research Review
	International Journal of Aviation Psychology
	Journal of Athletic Training
	Journal of Child Custody
	Journal of Communication
	Journal of Further & Higher Education
	Journal of Travel Research
	Telematics and Informatics
Regional focus	Annals of the University of Oradea, Economic Science Series
	Annals of the University of Petrosani Economics
	Asia Pacific Journal of Human Resources
	Asian Academy of Management Journal
	Asian Business & Management
	Asian Case Research Journal
	Asian Journal of Social Psychology
	Australian Journal of Psychology
	Australian Tax Forum
	Brazilian Administration Review
	Brazilian Business Review
	British Journal of Social Psychology
	Central European Business Review

Reason for exclusion	Excluded journal
	Copenhagen Journal of Asian Studies
	Ekonometria
	Far Eastern Economic Review
	German Journal of Human Resource Management
	Human Resources Psychology
	International Journal of Social Psychology
	Journal of Comparative Asian Development
	Journal of Psychology in Africa
	Journal of Work and Organizational Psychology
	Khoj Journal of Indian Management Research & Practices
	Nordic Psychology
	Ovidius University Annals, Series Economic Sciences
	Polish Journal of Management
	Scandinavian Journal of Psychology
	Schmalenbach Business Review
	South African Journal of Business Management
	South African Journal of Human Resource Management
	Spanish Journal of Psychology
	Swiss Journal of Sociology
	USV Annals of Economics & Public Administration

Appendix 2. Journals and number of articles included in literature review

Journal	N
Academy of Management Journal	1
Annual Review of Organizational Psychology and Organizational Behavior	1
Anxiety, Stress, and Coping	1
Applied Psychology: An International Review	9
Career Development International	1
Computers in Human Behavior	1
Consulting Psychology Journal: Practice and Research	1
Current Directions in Psychological Science	1
Current Psychology	3
Economic and Industrial Democracy: an international journal	2
European Journal of Work and Organizational Psychology	19
European Psychologist	1
Frontiers in Psychology	6
Group & Organization Management	1
Human Resource Management Review	1
Information and Organization	1
International Journal of Conflict Management	1
International Journal of Human Resource Management	1
International Journal of Management Reviews	1
International Journal of Stress Management	11
Journal of Applied Psychology	14
Journal of Business and Psychology	2
Journal of Business Research	2
Journal of Business Venturing	1
Journal of Career Assessment	1
Journal of Enterprise Information Management	1
Journal of Happiness Studies	1
Journal of Management	2
Journal of Managerial Psychology	1
Journal of Occupational and Organizational Psychology	11
Journal of Occupational Health Psychology	28
Journal of Organizational Behavior	8
Journal of Personnel Psychology	1
Journal of Positive Psychology	1
Journal of Transnational Management	1
Journal of Vocational Behavior	7
Organizational Behavior and Human Decision Processes	1
Personality and Individual Differences	3
Personnel Review	4

Journal	N
Psychological Reports	2
Public Management Review	1
Research in Organizational Behavior	1
Social Behavior and Personality: an international journal	1
Stress and Health	2
The Journal of Psychology: Interdisciplinary and Applied	2
Work	2
Work & Stress: An international Journal of Work, Health and Organisations	10

Appendix 3. First thank-you postcard to BEST participants

herzlichen Dank, dass wir Sie ein Stück auf Ihrer unternehmerischen Reise begleiten dürfen.

Sie haben nun schon die Hälfte aller Fragebögen geschafft - dafür möchten wir uns heute bedanken!

Alles Gute und viel Erfolg wünschen

Technische Universität München
TUM Entrepreneurship Research Institute
Lichtenbergstr. 6
85748 Garching

Appendix 4. Second thank-you postcard to BEST participants

bald folgt der letzte Fragebogen und Sie haben die Fragebogen-Serie geschafft. Danke dafür! Wir hoffen, Sie konnten die Fragebögen auch zu Ihrer persönlichen Reflektion nutzen.

Als kleine Aufmerksamkeit möchten wir uns mit dem TUM Lebkuchen-Herz bei Ihnen bedanken. Sie haben eine wertvolle Grundlage für unsere vier Dissertationen und die Forschung im Bereich Entrepreneurship geschaffen!

Melden Sie sich gerne bei uns, wenn wir Ihnen weiterhelfen können (best.ent@wi.tum.de).

Herzliche Grüße

Technische Universität München
TUM Entrepreneurship Research Institute
Lichtenbergstr. 6
85748 Garching

Appendix 5. Items for individual-level control variables

Construct with source	Item (English)	Item(German; own translation)	Response(English)	Response (German)
Affect (Thompson, 2007)	In the following you will find a list of different feelings and emotions. Please indicate to what extent you felt this way in the last 7 days. Upset Hostile Alert Ashamed Inspired Nervous Determined Attentive Active Afraid	Im Folgenden finden Sie eine Liste von verschiedenen Gefühlen und Emotionen. Bitte geben Sie an, inwieweit Sie sich während der letzten 7 Tage entsprechend gefühlt haben. Verärgert Feindselig Wach Beschämt Angeregt Nervös Entschlossen Aufmerksam Aktiv Ängstlich	1 (not at all) – 7 (extremely)	1 (gar nicht) – 7 (extrem)
Age (own item)	Please enter your year of birth (XXXX; e.g., 1978).	Bitte geben Sie das Jahr Ihrer Geburt an (JJJJ; z.B. 1978).		
Children in household (own item)	How many children live in your household?	Wie viele Kinder leben in Ihrem Haushalt?	Please enter a whole number/ integer.	Bitte geben Sie eine ganze Zahl an.

Construct with source	Item (English)	Item(German; own translation)	Response(English)	Response (German)
Education field (own item)	Please indicate your main field of education:	Bitte benennen Sie die Fachrichtung Ihrer Ausbildung:	Engineering, Teaching degree, Natural sciences or mathematics, Medicine or other health sector, Law, Social sciences, Business/ economics, Other (please specify…)	Ingenieurswissenschaften, Lehramt, Mathematik oder Naturwissenschaften, Medizin oder Gesundheitswesen, Rechtswissenschaften, Sozialwissenschaften, Wirtschaftswissenschaften, Anderer Abschluss (bitte spezifizieren...)
Educational level (own item)	Please indicate your highest degree of graduation:	Bitte benennen Sie Ihren höchsten Bildungsabschluss:	High school graduation, Apprenticeship, Bachelor, Diploma, Master, Doctoral degree, Other (please specify…)	Weiterführender Schulabschluss (Abitur, Fachhochschulreife, Mittlere Reife, Hauptschulabschluss), Berufsausbildung, Bachelor, Diplom, Master, Doktorgrad, Anderer Abschluss (bitte spezifizieren...)
Gender (own item)	Gender	Geschlecht	Diverse, Female, Male	Divers, Weiblich, Männlich
Part-time (own item)	How many percent are you working for your venture?	Zu wie viel Prozent arbeiten Sie in Ihrem Unternehmen?	Please enter a percentage (XX; e.g., 50, if you are spending an additional 50% for some other work).	Bitte geben Sie einen Prozentsatz an (XX; z.B. 50, wenn Sie noch weitere 50% Ihrer Zeit für eine andere Arbeit aufbringen).
Entrepreneurial experience (own item)	How many ventures have you (co-)founded (before the current one)?	Wie viele Unternehmen haben Sie (vor dem jetzigen) bereits (mit-) gegründet?	Please enter a whole number/ integer.	Bitte geben Sie eine ganze Zahl an.

Construct with source	Item (English)	Item(German; own translation)	Response(English)	Response (German)
Relationship status (Panel Study of Entrepreneurial Dynamics, Institute for Social Research, University of Michigan; small adaptations in responses)	What is your current marital status or living arrangement?	Was ist Ihr aktueller Familienstand oder Ihre aktuelle Lebenssituation?	Married, Long-term relationship, Single, Divorced, Separated, Widowed	Verheiratet, Feste Partnerschaft, Alleinlebend, Geschieden, Getrennt, Verwitwet

Appendix 6. Items for venture-level control variables

Construct with source	Item (English)	Item (German; own translation)	Response (English)	Response (German)
Employees (2019; own item)	How many full-time employees did your venture have employed on 1.1.2019?	Wie viele Vollzeit-Mitarbeiter waren am 1.1.2019 in Ihrem Unternehmen beschäftigt?	Please enter a whole number/ integer.	Bitte geben Sie eine ganze Zahl an.
Founded (own item)	Is your current venture already officially founded (e.g., as GmbH, AG, UG)?	Ist Ihr aktuelles Unternehmen bereits formal gegründet (z.B. GmbH, AG, UG)?	Yes/ No	Ja/ Nein
Founding date (own item)	When was your venture officially founded?	Wann wurde Ihr Unternehmen gegründet?	Please enter month and year of your foundation.	Bitte geben Sie Monat und Jahr der Gründung an (z.B. 01.2016)
Planned founding date (own item)	When do you plan to officially found your current venture?	Wann planen Sie Ihr aktuelles Unternehmen zu gründen?	Please enter month and year of your planned foundation	Bitte geben Sie Monat und Jahr der geplanten Gründung an (z.B. 04.2019)
Industry (previous BEST project; own wording)	In which industry is your venture primarily operating?	In welcher Industrie ist Ihr Unternehmen primär tätig?	Computer hardware and software, Services (professional and others), E-commerce, Consumer products, Life sciences, Science (materials and physical), Other (please specify)	Computer Hard- und Software, Dienstleistungen, E-Commerce, Konsumgüter, Life Sciences, Material- und Naturwissenschaften, Andere (bitte spezifizieren)
Perceived venture performance	Please indicate how satisfied you are with the venture's progress	Bitte geben Sie an, wie zufrieden Sie mit dem Fortschritt des Unternehmens	1 (not at all) – 7 (completely)	1 (überhaupt nicht) – 7 (voll und ganz)

Construct with source	Item (English)	Item (German; own translation)	Response (English)	Response (German)
(Clercq & Sapienza, 2006)	on the following criteria.	in den folgenden Bereichen sind:		
	Sales	Umsatz		
	Market share	Marktanteil		
	Return on investment (RoI)	Return on Investment (RoI)		
	Market development	Marktentwicklung		
	Please indicate to what extent you agree with the following statements.	Bitte geben Sie an, inwiefern Sie den folgenden Aussagen zustimmen.		
	I am very satisfied with the progress of our venture.	Ich bin sehr zufrieden mit dem Fortschritt unseres Unternehmens.		
	So far, I would rate our venture's performance as poor.	Bis jetzt würde ich die Leistung unseres Unternehmens als schlecht bewerten.		
	Considering its age, our venture has done very well.	Unter Berücksichtigung des Alters unseres Unternehmens hat es sich gut entwickelt.		
	Market conditions aside, our investments in this venture have greatly paid off.	Unabhängig von den Marktbedingungen haben sich unsere Investitionen in das Unternehmen richtig gelohnt.		
Revenue (own item)	Is your venture generating revenue?	Generiert Ihr Unternehmen Umsätze?	Yes/ No	Ja/ Nein

Construct with source	Item (English)	Item (German; own translation)	Response (English)	Response (German)
Team performance (Shaw et al., 2011)	Please rate in general your founding team's performance on the following dimensions.	Bitte geben Sie an, wie Sie im Allgemeinem Ihr Gründungsteam hinsichtlich der folgenden Dimensionen einschätzen.	1 (very poor) – 7 (outstanding)	1 (sehr schlecht) – 7 (hervorragend)
	Quality of work	Arbeitsqualität		
	Getting work done efficiently	Arbeitseffizienz		
	Flexibility in dealing with unexpected changes	Flexibilität im Umgang mit unerwarteten Veränderungen		
	Overall performance	Gesamtleistung		