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Univ.-Prof. Dr. Isabell M. Welpé

**Zooming in, zooming out:  
The role of cognitive foci in organizational and  
entrepreneurial cognition**

**Andranik Tumasjan**

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Vorsitzender: Univ.-Prof. Dr. Dr. Holger Patzelt

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2. Univ.-Prof. Dr. Dres. h.c. Arnold Picot,  
Ludwig-Maximilians-Universität München

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## **Abstract**

This thesis investigates the role of cognitive foci in organizational and entrepreneurial cognition and behavior. Drawing on two theories from psychology, construal level theory and regulatory focus theory, the results of multiple empirical studies indicate that cognitive foci systematically alter individuals' cognition and behavior in both organizational and entrepreneurial contexts. First, building on construal level theory, an empirical study demonstrates that under conditions of high social distance from an organization's leader individuals make harsher ethical evaluations of a leader's moral transgressions than under conditions of low social distance. Examining the underlying mediating mechanism reveals that in high social distance individuals cognitively focus on abstract aspects of morality (rather than considering the concrete circumstances of the moral transgression), which in turn results in relatively harsh evaluations of ethical leadership as compared to conditions of low social distance. Second, also building on construal level theory, a study in the entrepreneurship context shows that temporal distance alters the impact of an entrepreneurial opportunity's desirability and feasibility on opportunity evaluation and exploitation intentions. Whereas in high temporal distance individuals cognitively focus on an entrepreneurial opportunity's desirability rather than its feasibility, in low temporal distance individuals are stronger focused on an opportunity's feasibility rather than its desirability. As a result, under conditions of high temporal distance between the phases of opportunity evaluation and opportunity exploitation, individuals' opportunity evaluation and exploitation intentions are stronger influenced by desirability rather than feasibility considerations, whereas under conditions of low temporal distance, evaluation and exploitation intentions are stronger affected by feasibility rather than desirability considerations. Third, building on regulatory focus theory, the empirical results of a study on entrepreneurial opportunity

recognition demonstrate that entrepreneurs' promotion focus (i.e., a cognitive focus on gains and positive outcomes) positively impacts opportunity recognition, whereas entrepreneurs' prevention focus (i.e., a cognitive focus on losses and negative outcomes) had no significant effect on opportunity recognition. Moreover, this study shows that entrepreneurs' high levels of promotion focus may compensate for low levels of both creative and entrepreneurial self-efficacy in opportunity recognition. Based on the empirical results, the thesis derives implications for both theory and practice and delineates directions for further research in organizational and entrepreneurial cognition and behavior.

## **Kurzfassung (German abstract)**

Die vorliegende Dissertation untersucht die Rolle kognitiver Foki für organisationale und unternehmerische Kognitionen und Verhalten. Basierend auf zwei psychologischen Theorien – construal level theory und regulatory focus theory – zeigen die Ergebnisse mehrerer empirischer Studien, dass kognitive Foki einen systematischen Einfluss auf die Kognitionen und das Verhalten von Individuen in organisationalen und unternehmerischen Kontexten aufweisen. Auf der Grundlage der construal level theory zeigt eine erste empirische Studie, dass bei hoher sozialer Distanz zu einer Führungskraft in einem organisationalen Kontext diese nach einem moralischen Fehlverhalten strenger (d.h. als weniger ethisch) bewertet wird als bei niedriger sozialer Distanz. Eine Analyse des zugrundeliegenden vermittelnden Mechanismus dieses Effekts zeigt, dass Personen bei hoher sozialer Distanz kognitiv stärker auf abstrakte Aspekte moralischen Verhaltens fokussieren (und dabei die konkreten Umstände des moralischen Fehlverhaltens weniger berücksichtigen), was in vergleichsweise strengeren Bewertungen ethischen Führungsverhaltens als bei niedriger sozialer Distanz resultiert. Ebenfalls auf Grundlage der construal level theory zeigt eine zweite empirische Untersuchung im Unternehmensgründungskontext, dass zeitliche Distanz den Einfluss der Erwünschtheit (desirability) und Machbarkeit (feasibility) einer unternehmerischen Gelegenheit auf die Bewertung dieser Gelegenheit und auf die Intention diese Gelegenheit auszunutzen verändert. Während Individuen bei hoher zeitlicher Distanz kognitiv stärker auf die Erwünschtheit als auf die Machbarkeit einer unternehmerischen Gelegenheit fokussieren, zeigt sich bei niedriger zeitlicher Distanz, dass Individuen stärker auf die Machbarkeit als die Erwünschtheit einer unternehmerischen Gelegenheit fokussieren. Infolgedessen werden die Bewertungen einer unternehmerischen Gelegenheit und die Intention, diese Gelegenheit auszunutzen bei einer hohen zeitlichen Distanz zwischen Bewertungsphase und Ausnutzungsphase stärker von Erwünschtheitsaspekten als von

Machbarkeitsaspekten beeinflusst, während sie bei einer niedrigen zeitlichen Distanz stärker von Machbarkeitsaspekten als von Erwünschtheitsaspekten beeinflusst werden. Auf der Grundlage der regulatory focus theory zeigen die empirischen Ergebnisse einer dritten Untersuchung zur Identifikation unternehmerischer Gelegenheiten, dass ein promotion focus (d.h. ein kognitiver Fokus auf Gewinne und positive Ereignisse) bei Unternehmensgründern einen positiven Einfluss auf die Identifikation von unternehmerischen Gelegenheiten hat, wohingegen ein prevention focus (d.h. ein kognitiver Fokus auf Verluste und negative Ereignisse) keinen signifikanten Effekt hat. Darüber hinaus zeigt diese Untersuchung, dass ein hoher promotion focus eine geringe Ausprägung von kreativer und unternehmerischer Selbstwirksamkeit von Unternehmern bei der Identifikation von unternehmerischen Gelegenheiten kompensieren kann. Auf Grundlage der empirischen Ergebnisse werden in der Dissertation Implikationen für Theorie und Praxis abgeleitet und Leitlinien für weitere Forschung im Bereich von Kognition und Verhalten im organisationalen und unternehmerischen Kontext entwickelt.

## **1 Introduction<sup>1</sup>**

### **1.1 Motivation and research questions**

A continuing discourse in organizational and entrepreneurial research centers on the role of cognition in organizational and entrepreneurial behavior (Hodgkinson & Healey, 2008; Mitchell et al., 2007). The importance of studying the cognitive processes of organizational decision makers has been widely acknowledged and institutionalized in the last decades (Walsh, 1995). Already in his seminal work “The functions of the executive”, Barnard (1938/1968) argues for the major relevance of understanding individuals’ cognition in order to explain the functioning and development of organizations. As Bougon, Weick, and Binkhorst (1977) conclude, investigating individuals’ cognitive processes is “central to organization theory because the individual processes involved select and control organizational activities, development, and evolution” (p. 606). This perspective is even more important in today’s market environments characterized by rapid and fundamental socio-technological transformations (Picot, Reichwald, & Wigand, 2008) confronting individuals and organizations with “unprecedented information-processing burdens” (Hodgkinson & Healey, 2008, p. 388). Thus, a major challenge for market participants is the processing of a vast stream of extremely complex and ambiguous information constituting the basis for decision making (Walsh, 1995). Understanding the cognitive mechanisms that underlie individuals’ decision making is therefore of utmost relevance for contemporary organizational and entrepreneurship research.

Cognition and behavioral-based approaches to decision making have demonstrated that individuals’ information processing and the resulting decisions do not follow perfectly “rational” rules, but are shaped by biases and heuristics (Gigerenzer & Gaissmaier, 2011;

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<sup>1</sup> This section is partly based on Tumasjan and Braun (2012), Tumasjan, Strobel, and Welppe (2011), and Tumasjan, Welppe, and Spörrle (2012).



Simon, 1979; Tversky & Kahneman, 1974). These cognitive biases and heuristics have been demonstrated to impact individuals' cognition as a result of both situational (e.g., environmental factors) and dispositional (e.g., personality) influences (Gilovich, Griffin, & Kahneman, 2002). In a similar vein, a large body of social cognition research has focused on investigating the situational and individual boundary conditions of social cognitive processes (Bodenhausen & Lambert, 2003; Fiske & Macrae, 2012; Fiske & Taylor, 2008). The present thesis builds on this stream of research by investigating the role of individuals' *cognitive foci* – resulting from both situational and dispositional influences – in organizational and entrepreneurial cognition and behavior.

Cognitive foci may be defined as individuals' stable or situationally variable emphasis on certain aspects of information about the social world when perceiving, interpreting, analyzing, and using this information. Two major social cognitive theories are at the heart of explaining the emergence and the implications of such cognitive foci: construal level theory (Trope & Liberman, 2010) and regulatory focus theory (Higgins, 1997). In short, whereas construal level theory explains how psychological distance (i.e., temporal, social, spatial, and hypothetical distance) directs individuals' cognitive focus toward abstract vs. concrete features of objects or events, regulatory focus theory explains how individuals' cognitive foci differ depending on individual differences in goal orientation (promotion vs. prevention focus). Recently, basic social cognition research based on these theories has demonstrated the crucial role of these cognitive foci in individuals' information processing and decision making (Higgins, 2006; Trope & Liberman, 2010).

However, despite their espoused and documented importance for individuals' information processing and decision making, little is known about the role of these cognitive foci in organizational and entrepreneurial cognition and behavior. This constitutes a major oversight in the management literature for the following reasons. First, prior basic social

psychology research has demonstrated that both the cognitive foci conceptualized by construal level theory and regulatory focus theory significantly and consistently alter individuals evaluations, judgment, and decision making across a variety of tasks and settings (Higgins, 2006; Trope & Liberman, 2010). Thus, this basic research provides a strong indication that fundamental cognitive processes inherent in all individuals are systematically influenced by these cognitive foci. Since individuals in organizational and entrepreneurial contexts permanently have to make evaluations, judgments, and decisions, these cognitive foci need to be integrated into organizational and entrepreneurship theory and research to realistically model individuals' behavior in these settings.

Second, the usefulness and predictive validity of both theories conceptualizing these cognitive foci in applied settings has been demonstrated in such fields as marketing, consumer behavior, or health psychology (e.g., Alexander, Lynch, & Wang, 2008; Chandran & Menon, 2004; Dhar & Kim, 2007; Fiedler, 2007; Hall & Fong, 2007; Hong & Lee, 2010; Khan, Zhu, & Kalra, 2011; Kim & John, 2008; Kim, Park, & Wyer, 2009; Kim, Rao, & Lee, 2009; Kim, Zhang, & Li, 2008; Kovac & Rise, 2007; Lee & Ariely, 2006; Lynch & Zauberman, 2006, 2007; Tangari, Folse, Burton, & Kees, 2010; Tsai & McGill, 2011; Wright et al., 2012; Zhao & Xie, 2011; Ziamou & Veryzer, 2005). This research consistently indicates that both theories and their conceptualization of cognitive foci are able to describe, explain, and predict important phenomena in applied contexts. Therefore, organizational and entrepreneurship research can be expected to highly profit from incorporating theories of cognitive foci to extend our understanding of organizational and entrepreneurial phenomena. However, as indicated above, theory and research in organizational and entrepreneurship research has as yet made much less use of both theories' conceptualization of cognitive foci in modeling individuals' decision making and behavior. In particular, whereas construal level theory has as yet received very limited attention in both the organizational and entrepreneurial literature (notable recent exceptions include Grossman, Yli-Renko, & Janakiraman, 2011; Breugst,

Patzelt, Shepherd, & Aguinis, 2012; Urbig, Bürger, Patzelt, & Schweizer, 2011; Welpel, Tumasjan, & Strobel, 2010), accounts of regulatory focus theory are more widespread in both literatures (e.g., Baron, 2002; Brockner, Higgins, & Low, 2004; Bryant, 2007; 2009; De Cremer, Mayer, van Dijke, Bardes, & Schouten, 2009; Dewett & Denisi, 2007; Fitzsimmons & Douglas, 2010; Hmieleski & Baron, 2008; McMullen & Shepherd, 2002; Neubert, Kacmar, Carlson, Chonko, & Roberts, 2008; Wallace & Chen, 2006; Wallace, Johnson, & Frazier, 2009; Wu, McMullen, Neubert, & Yi, 2008), but also still have remained relatively scant.

Third, both theories of cognitive foci have not only been demonstrated to be valid and useful in various other applied social science disciplines, but also offer a remarkably wide scope of generalizability across contexts and situations by providing a unified theoretical framework for the phenomena they explain. In particular, construal level theory provides a unified theoretical framework for examining the influence of four fundamental dimensions of distance (i.e., temporal, social, spatial, and hypothetical distance) on individuals' evaluation, judgment, decision making, and behavior. Since those four distance dimensions arguably account for almost all distances that individuals typically encounter, construal level theory may be considered one of the most generalizable current social science theories providing rich implications and applications for a range of phenomena. While the implications of distance are often studied in both organizational behavior (e.g., Antonakis & Atwater, 2002; Avolio, Zhu, Koh, & Bhatia, 2004; Golden & Fromen, 2011; Howell & Hall-Merenda, 1999; Howell, Neufeld, & Avolio, 2005; Napier & Ferris, 1993) and entrepreneurship research (e.g., Audretsch & Feldmann, 1996; Baptista & Swann, 1998; Baum, Li, & Usher, 2000; de Jong & Freel, 2010; Ingram & Baum, 1997; Lemarie, Mangematin, & Torre, 2001; Zeller, 2001), a unified theoretical framework of distance has been missing (Picot et al., 2008), often leading to inconclusive results (Welpel et al., 2010).

Similarly, regulatory focus theory provides a wide scope of generalizability and, thus, may account for various phenomena in both organizational behavior and entrepreneurship. The fundamental distinction between promotion focus (i.e., individuals' focus on gains and positive outcomes) and prevention focus (i.e., individuals' focus on losses and negative outcomes) revealed by regulatory focus theory exists as both a stable individual difference that applies across situations and contexts (often termed "chronic regulatory focus"; Higgins, 1997) as well as a situationally malleable state that can be temporarily present in individuals (i.e., by activating a temporary promotion or prevention orientation which is often termed "momentary regulatory focus"; Higgins et al., 2001). Thus, regulatory focus theory provides a unified theoretical framework covering a wide range of individuals' thoughts and resulting behaviors that exist chronically or maybe activated momentarily.

Therefore, the goal of this thesis is to address this research gap identified in the literature by investigating the role that cognitive foci play in several organizational and entrepreneurial phenomena. To this end, the present thesis focuses on the following three main research questions that have as yet not been addressed in the current literature:

- (1) How does social distance influence individuals' cognitive focus when evaluating organizational leaders after moral transgression and what is the underlying mediating mechanism of this influence?
- (2) How does temporal distance influence individuals' cognitive focus on entrepreneurial opportunities' desirability and feasibility when evaluating and intending to exploit these opportunities?
- (3) How does entrepreneurs' cognitive focus on positive vs. negative outcomes influence entrepreneurial opportunity recognition and how does this focus interact with major self-regulatory mechanisms?

By addressing these research questions, the present thesis contributes to the current state of the management literature by building and testing theory on the role of different cognitive foci in organizational and entrepreneurial contexts in the following ways.

First, this thesis demonstrates that incorporating the influence of different distance dimensions as conceptualized by construal level theory (Trope & Liberman, 2010) into organizational and entrepreneurial theory adds value to our understanding of various phenomena in these fields. In particular, this thesis shows how in light of the different cognitive foci induced by high vs. low levels of social and temporal distance explain previously unexplained puzzles in the areas of leadership (Brown & Treviño, 2006) and entrepreneurial opportunity evaluation and exploitation (Forlani & Mullins, 2000; Mitchell & Shepherd, 2010). Since organizational decision makers and entrepreneurs operate in contexts that are characterized by various forms of social and temporal distance, these findings are important to advance our understanding of the decision making processes in these areas.

Second, the results of this thesis show how integrating the concept of cognitive foci in terms of regulatory focus theory (Higgins, 1997) into research on opportunity recognition enhances our understanding of the fundamental question why some individuals but not others recognize entrepreneurial opportunities (Baron, 2004). Moreover, this thesis advances current entrepreneurship theory by building and testing a compensatory model of a cognitive focus (i.e., promotion focus) and major forms of entrepreneurs' self-regulation (i.e., entrepreneurial and creative self-efficacy) which suggests that cognitive foci may make up for low levels of entrepreneurs' self-regulatory mechanisms in influencing opportunity recognition. Since opportunity recognition is at the heart of entrepreneurship (Shane & Venkataraman, 2000), this thesis' results make an important contribution to strengthening our knowledge on the mechanisms and boundary conditions that foster the successful identification of opportunities.

To address the main research questions on the role of cognitive foci posed above, this thesis mainly draws on construal level theory (Trope & Liberman, 2010) and regulatory focus theory (Higgins, 1997). The following sections will briefly introduce both theories' core tenets and discuss their scope and applicability for organizational and entrepreneurship research.

### **1.2 Theoretical background**

#### **1.2.1 Construal level theory**

Construal level theory (Trope & Liberman, 2010) offers a unified theoretical framework explaining the influence of four distinct dimensions of psychological distance – temporal, social, spatial, and hypothetical distance – on individuals' thoughts and behaviors. In construal level theory, temporal distance refers to the distance between the present moment and a point in time in the near or distant future or past. Social distance comprises the distinction between the self and others or between similar and/or familiar vs. dissimilar and/or unfamiliar others. Spatial distance is defined as the distance between “here” and other locations. Finally, hypothetical distance refers to the distinction between real and imagined or probable and improbable events or objects (Trope & Liberman, 2010). Specifically, the theory posits a relationship between the distance of an individual from an entity and this individual's level of cognitive “construal” (i.e., the degree of abstractness of mental representation) of this entity: with increasing distance from an entity, individuals are prone to form “high-level construals” (i.e., increasingly abstract representations), whereas with decreasing distance, individuals tend to form “low-level construals” (i.e., increasingly concrete representations; Trope & Liberman, 2010). For example, when contemplating about one's summer holidays beginning in six months from now (high temporal distance), individuals typically think about this holiday in terms of abstract high-level construals, such as “fun” or “recreation”. However, when thinking about holidays beginning in six days from now (low temporal distance),

individuals' cognitive focus tends to shift to concrete low-level construals, such as "checking in at the hotel" or "renting a motor boat". Thus, this theory explains how individuals' cognitive focus shifts from thinking about entities in terms of their abstract vs. their concrete features as a function of the amount of psychological distance.

It is important to note that by "psychological distance", construal level theory refers to objects or events that "are not present in the direct experience of reality" due to their remoteness on one or more of the four fundamental distance dimensions (i.e., temporal, social, spatial, and hypothetical distance) from the individual's "here and now" (Liberman, Trope, & Stephan, 2007, p. 353). While the need for inclusion of further potential dimensions of distance (e.g., informational distance, perspective distance or affective distance) into construal level theory has been proposed (Fiedler, 2007), Liberman, Trope, and Wakslak (2007) argue in their response to Fiedler (2007) that the proposed distances rather constitute *outcomes* of distance rather than being distance dimensions in their own right. Thus, they argue that their framework covers the four fundamental distance dimensions that may be defined objectively (i.e., existing outside the individual and thereby constituting an external influence on individuals' cognition; Liberman, Trope, & Wakslak, 2007).

In summary, by providing a unified theoretical account of distance, construal level theory is able to make predictions about how temporal, social, spatial, and hypothetical distance impact individuals' thoughts and behaviors in organizational and entrepreneurial settings. In today's economic environment, distance is a ubiquitous phenomenon and managing distance thus constitutes a central challenge for organizations (Picot, Ripperger, & Wolff, 1996). In this vein, construal level theory helps to explain and predict how individuals' and organizations' decision making is influenced by the distances separating them from their past and future (e.g., future career prospects or future date of launching a new product), from others (e.g., corporate leaders or business angels), from their current locations (e.g.,

distributed teams or international investment decisions), and by hypothetical or (im-)probable events (e.g., had I chosen another profession or probability of being acquired by the market leader).

### **1.2.2 Regulatory focus theory**

Regulatory focus theory (Higgins, 1997) is a theory of self-regulation that describes the cognitive foci resulting from differences in the nature of individuals' goals and the ways in which individuals achieve those goals. The theory posits two distinct self-regulatory orientations: promotion focus and prevention focus (Higgins, 1997). Promotion-focused individuals are motivated to bring their current self into alignment with their "ideal" self (i.e., hopes, wishes, and aspirations) and, hence, focus on advancement, accomplishment, and attaining gains (i.e., individuals strive for positive outcomes). In contrast, prevention-focused individuals try to bring their current self into alignment with their "ought" self (i.e., duties, obligations or responsibilities), and, hence, focus on security, safety, and avoiding losses (i.e., individuals seek to prevent negative outcomes).

This basic differentiation between promotion and prevention focus is conceptualized as a stable disposition, i.e., individuals generally differ in the extent to which they are promotion or prevention-focused. This disposition has been labeled "chronic regulatory focus"; Higgins, 1997, 1998). However, regulatory focus is not only a stable individual difference, but can also be a state that may be induced and temporarily activated in individuals. This situationally alterable state of a promotion or prevention orientation is referred to as "momentary regulatory focus"; Freitas & Higgins, 2002; Higgins et al., 2001). For instance, Wu et al. (2008) have demonstrated that leaders, through their leadership style, can induce a situational promotion focus in their employees, which in turn enhances these employees' creative behavior. Moreover, besides regulatory focus' usefulness in predicting thoughts and behaviors across individuals and being situationally variable, regulatory focus



theory also explains individuals' different strategies of goal attainment that go along with the two foci: "eager" strategies and "vigilant" strategies. Individuals in a promotion focus typically apply eager strategies, i.e., behaviors that ensure "hits" and avoid "errors of omission" in order to achieve gains and positive outcomes. In contrast, individuals in a prevention focus typically apply vigilant strategies, i.e., behaviors that ensure the absences of "misses" and avoid "errors of commission" to prevent losses and negative outcomes (Crowe & Higgins, 1997).

In summary, regulatory focus theory offers a unified theoretical framework of dispositional and situational accounts of a variety of individuals' cognitions and behaviors. Due to its wide scope of generalizability and applicability, regulatory focus theory can be applied to explain and predict a range of phenomena in both organizational behavior (e.g., leadership outcomes, task performance, creativity, team climate) and entrepreneurship (e.g., risk taking, opportunity recognition, evaluation, and exploitation, coping with failure). Interestingly, while research based on regulatory focus theory has received increased attention in the organizational behavior literature in the past years (e.g., De Cremer et al., 2009; Neubert et al., 2008; Wallace & Chen, 2006; Wallace et al., 2009), entrepreneurship researchers have only recently started to empirically test its predictions (e.g., Hmieleski & Baron, 2008), albeit theoretical predictions regarding its role in different phases of the entrepreneurial process have also been delineated earlier (Baron, 2002; Brockner et al., 2004).

### **1.2.3 Relationship between construal level and regulatory focus**

Construal level theory and regulatory focus theory are similar in that they are both concerned with the role of individuals' basic cognitive foci (construal level theory: focus on abstract vs. concrete features of an event or object; regulatory focus theory: focus on positive outcomes vs. negative outcomes). Notably, previous research in consumer behavior has empirically shown a relationship between construal level and regulatory focus. In particular,

Lee, Keller, and Sternthal (2010) have demonstrated that promotion-focused individuals are prone to form high-level construals, whereas prevention-focused individuals rather tend to form low-level construals. Moreover, a fit (in comparison to a non-fit) between regulatory focus and construal level (i.e., a promotion focus going along with abstract, high-level construals and a prevention focus going along with concrete, low-level construals) has been shown to increase individuals' evaluation of an object (e.g., a consumer good) and also to increase individuals' task performance. In a related vein, Pennington and Roese (2003) have demonstrated that regulatory focus also relates to temporal distance. Their series of experiments indicates that a promotion focus is more likely to predominate for temporally distant goals, whereas a prevention focus is about equally salient for both temporally proximal and distant goals. Thus, previous research indicates that both cognitive foci may also be fruitfully combined to make predictions about individuals' evaluations and behaviors.

In summary, both construal level theory and regulatory focus theory and their conceptualization of cognitive foci offer widely generalizable theoretical frameworks that can help to explain a range of processes and outcomes in both organizational and entrepreneurship research. The present thesis leverages both theoretical frameworks to contribute to our understanding of organizational and entrepreneurial cognition and behavior covering three main areas: ethical leadership evaluations (organizational behavior), opportunity evaluation and exploitation intentions (entrepreneurial behavior), and opportunity recognition (entrepreneurial behavior). Each of these areas is addressed in a separate chapter (Chapters 2-4) using a variety of different methods and data as will be briefly described in the following section.

### **1.3 Research methods and data sources**

The present thesis' empirical parts (Chapters 2-4) apply experimental and survey methodological approaches using primary data obtained from different sample populations.

The main methodological advantages and disadvantages of both approaches will be outlined in the following paragraph.

Using an experimental approach offers the main advantage that the effect observed on the dependent variables can be said to have been caused by the independent variables, which reflects this method's high internal validity. However, the generalizability of the findings to contexts different from the experimental situation is often lower in experimental studies in comparison to field studies, which reflects the lower external validity of this approach (Grant & Wall, 2009). On the other hand, applying survey methodology has the main advantage that it allows the researcher to capture individual-level variables (e.g., personality characteristics or attitudes) and is therefore widely established as the typical method of assessing such variables. However, using survey methodology also goes along with potential response biases (e.g., question format biases; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) which constitute the main disadvantage of this approach. The following paragraphs describe the respective methodological approach of each chapter as well as the statistical analysis techniques used to analyze the obtained primary data.

First, to study the role of social distance in influencing individuals' cognitive focus in leadership evaluations after moral transgression, a scenario experiment with 617 student participants was conducted online. The hypotheses were tested with structural equation modeling and a bootstrapping technique for mediation analyses (Shrout & Bolger, 2002). Using a scenario experiment for investigating this research question has the main advantage that the researcher can infer causal relationships between the independent and the dependent variables. Moreover, in the realm of business ethics, experimental scenario-based studies are methodologically established (Treviño, 1992) and constitute an especially useful approach, since it is hardly possible to directly investigate unethical behaviors and individuals' reactions to those during their occurrence in real life settings.

Second, to examine how temporal distance affects individuals' cognitive focus in the context of entrepreneurial evaluation and exploitation intentions, three experimental scenario-based studies with student and entrepreneur participants were conducted. The data were analyzed using ordinary least square (OLS) regression and regression-based procedures for testing mediation (Preacher & Hayes, 2008). An experimental scenario-based approach was chosen to allow for inferring causality between the independent and dependent variables. Furthermore, such an approach is consistent with the vast majority of related prior research on the effects of different dimensions of distance (Trope & Liberman, 2010).

Third, to investigate the influence of cognitive foci emphasizing positive vs. negative outcomes (promotion vs. prevention focus) in entrepreneurial opportunity recognition, an established opportunity recognition task (Shepherd & DeTienne, 2005) was distributed to 254 entrepreneurs from different industries. The hypotheses were tested using OLS regression and procedures for moderation analysis (Aiken & West, 1991). The opportunity recognition task offers the advantage that the researcher can study entrepreneurs' opportunity recognition, while keeping the context of the opportunity constant. Such an approach allows to separate the effects of the individual from the nature of the opportunity recognized (Gregoire, Shepherd, & Lambert, 2010). Moreover, since the level of opportunity recognition in this task is rated by independent judges, this technique overcomes methodological limitations (e.g., self-report biases) present in similar prior research (Gregoire et al., 2010).

### **1.4 Structure, main results, and contributions**

Apart from the introduction section (Chapter 1), the main part of this thesis consists of three empirical contributions addressing the role of different cognitive foci in organizational and entrepreneurial settings. Each study is described in a separate chapter (Chapters 2 to 4) which each introduces the research topic, describes and builds theory, outlines the methodology, reports the results, and concludes with a discussion of the theoretical

contributions, limitations, implications for practice, and recommendations for further research. In particular, Chapter 2 builds on construal level theory to explain how social distance alters individuals' cognitive focus when making ethical leadership evaluations. In Chapter 3, construal level theory is used to demonstrate how temporal distance directs individuals' cognitive focus toward perceiving an entrepreneurial opportunity's desirability as more vs. less important than an opportunity's feasibility. Chapter 4 uses regulatory focus theory to demonstrate that a cognitive focus on gains and positive outcomes (i.e., a promotion focus) positively influences entrepreneurial opportunity recognition and that a promotion focus may also compensate for entrepreneurs' low levels of self-efficacy. Finally, Chapter 5 concludes this thesis by summarizing the main contributions of this research and offering avenues for future research. The following paragraphs outline the key research questions, results, and contributions of the three main empirical studies.

Chapter 2 builds on construal level theory's predictions about the effects of social distance on individuals' cognitive focus in information processing to offer an explanation to a puzzling inconsistency noted in previous ethical leadership research. In particular, in their seminal review of the ethical leadership literature, Brown and Treviño (2006) observe that in polls asking respondents about the ethical conduct of corporate leaders *in general*, only a few respondents exhibit confidence in corporate leaders' ethical conduct. However, when asked about *their own* organization's leaders, the majority of respondents indicate confidence in their leadership's ethical behavior. Addressing this puzzling discrepancy, this chapter posits that social distance (i.e., high vs. low social distance) between the evaluator (e.g., a leader's colleague) and the leader alters the ethical leadership evaluation of this leader. Based on construal level theory, the results of this experimental study indicate that under conditions of high social distance from the evaluator leaders receive lower ethical leadership ratings (i.e., they are evaluated more harshly) than under conditions of low social distance when given the same information about moral transgression committed by the leader. Investigating the

underlying mechanisms of this effect, the mediation results show that social distance leads to higher ratings of moral reasoning (i.e., the extent to which the thoughts and motives of the leader and other circumstantial information are considered by the evaluator) ascribed to the leader, which in turn influences ethical leadership ratings. Moreover, by demonstrating a positive relationship between ethical leadership evaluations and leader-member exchange after moral transgression, this study indicates that ethical leadership may not only be seen as morally appropriate, but also extends to actively producing a positive leader-member relationship.

This chapter makes the following main contributions to the literature. First, addressing the discrepancy between more favorable evaluations of ethical leadership for one's own organization's leaders than for corporate leaders in general found in previous research, this chapter offers an explanation for this puzzle demonstrating that ethical leadership evaluations are altered by different levels of social distance. Second, whereas previous research on construal level theory has mainly relied on experiments in laboratory settings, this chapter contributes to the literature by showing the theory's usefulness in predicting and explaining leadership phenomena in an applied organizational context. Third, in contrast to previous research that has often been confined to demonstrating the moderating effect of distance and construal level, the present research proposes and explicitly tests the underlying cognitive mechanisms mediating this effect.

Chapter 3 draws on construal level theory and its conceptualization of temporal distance to argue that, in contrast to what previous entrepreneurial opportunity research (e.g., Haynie, Shepherd, & McMullen, 2009; Mitchell & Shepherd, 2010) would seem to suggest, desirability and feasibility may not always be equally important for entrepreneurs' opportunity evaluation and exploitation. Instead, consistent with previous construal level theory research (Lieberman & Trope, 1998), this chapter argues that the temporal distance

between the phase of opportunity evaluation and the envisioned future exploitation phase alters the perceived importance of an opportunity's desirability and feasibility as a result of individuals' cognitive focus. Since desirability constitutes a "high-level construal" (Liberman & Trope, 1998) its relative importance should increase with increasing temporal distance, whereas the relative importance of feasibility (constituting a "low-level construal"; Liberman & Trope, 1998) should decrease with increasing temporal distance. Two independent experimental scenario studies (experiment 1: students; experiment 2: entrepreneurs) support this hypothesis demonstrating that under conditions of high future temporal distance (i.e., 1 year) between the phase of opportunity evaluation and the phase of opportunity exploitation, desirability rather than feasibility has a stronger influence on opportunity evaluation and exploitation intentions. However, under conditions of low future temporal distance (i.e., 1 month) between the phase of opportunity evaluation and the phase of opportunity exploitation, feasibility rather than desirability stronger impacts opportunity evaluation and exploitation intentions. Additionally, a third experiment demonstrates the reverse link between construal level and temporal distance, namely that the levels of an opportunity's desirability and feasibility causes individuals to consider different temporal distances into the future as appropriate for acting on an opportunity. This experiment's results show that, consistent with construal level theory, opportunities characterized by high desirability and low feasibility are preferred for the more distant future, whereas opportunities characterized by low desirability and high feasibility are preferred to be acted upon in the comparatively nearer future.

This chapter's main contributions to the entrepreneurship literature are as follows. First, integrating the concept of temporal distance into research on opportunity desirability and feasibility, this chapter – in contrast to previous related research – demonstrates that the relative importance of desirability and feasibility for opportunity evaluation and exploitation intentions depends on the temporal distance between the phases of evaluation and

exploitation. Second, this chapter introduces construal level theory and its concept of temporal distance to the research stream of time issues in entrepreneurship, thereby concurrently demonstrating its value in explaining empirical inconsistencies found in previous opportunity evaluation research (e.g., Forlani & Mullins, 2000). Third, also contributing back to basic research on construal level theory, this chapter shows that different levels of desirability and feasibility also give rise to seeing different temporal distances as opportune for opportunity exploitation.

Chapter 4 builds on regulatory focus theory and previous related conceptual work in entrepreneurship (Baron, 2002; Brockner et al., 2004) to empirically test the prediction that a cognitive focus on gains and positive outcomes (i.e., a promotion focus) has a positive influence on opportunity recognition, whereas a cognitive focus on losses and negative outcomes (i.e., a prevention focus) negatively impacts opportunity recognition. Moreover, this chapter integrates regulatory focus theory with self-efficacy theory to build a compensatory model of promotion focus and two types of self-efficacy (i.e., creative and entrepreneurial self-efficacy). Results from an opportunity recognition task completed by a sample of entrepreneurs indicate that promotion focus has indeed a positive influence on entrepreneurs' opportunity recognition, whereas prevention focus had no significant influence. Supporting the predictions of the compensatory model, this study also shows that a high promotion focus may compensate for low levels of both entrepreneurs' creative and entrepreneurial self-efficacy.

This chapter contributes to the current knowledge in entrepreneurship in three main ways. First, responding to previous calls in the literature (e.g., Brockner et al., 2004), this study is the first to empirically test the influence of regulatory focus on opportunity recognition in a pre-exploitation phase thereby overcoming the limitations of previous research (Hmieleski & Baron, 2008) that has studied the role of regulatory focus in



opportunity exploitation (but not recognition). Second, this study adds value to the scant literature on the role of self-efficacy in entrepreneurial opportunity recognition by using a research design which is robust against methodological shortcomings present in previous research (i.e., common source bias and self-report biases). Third, extending previous exploratory work investigating the role of regulatory focus and self-efficacy concurrently (Bryant, 2007, 2009), this research integrates both theories to build and quantitatively test an interactive model of promotion focus and self-efficacy in influencing opportunity recognition.

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## 2 Ethical leadership evaluations after moral transgression:

### Social distance makes the difference

#### Abstract

The present study investigates how social distance influences ethical leadership evaluations, and how in turn ethical leadership evaluations affect leader-member exchange after a leader's moral transgression. Based on construal level theory, we propose that higher social distance will lead to more severe evaluations of immoral behavior and, therefore, entail lower ethical leadership ratings. Moreover, we hypothesize that ethical leadership will positively affect leader-member exchange. As expected, the results of our experimental scenario study indicate that participants in the high social distance condition judged leaders more harshly for moral transgression (i.e., they gave lower ethical leadership ratings) than in the low social distance condition. This effect was mediated by the extent of concrete moral reasoning ascribed to the leader. Moreover, as predicted, ethical leadership ratings had a positive influence on leader-member exchange. We discuss research and managerial implications of our findings.

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### **3 Easy now, desirable later: The moderating role of temporal distance in opportunity evaluation and exploitation**

#### **Abstract**

How does the temporal distance between the phases of evaluation and exploitation alter entrepreneurs' opportunity evaluation? Building on construal level theory, we argue that the impact of an opportunity's desirability and feasibility on evaluation and exploitation intentions varies systematically with temporal distance. We experimentally demonstrate stronger influences of desirability on evaluation when the exploitation phase is temporally distant rather than near, whereas feasibility stronger affects evaluation when exploitation is near rather than distant. Using construal level theory, we explain empirical inconsistencies in previous research and demonstrate the usefulness of integrating the concept of temporal distance in entrepreneurship research and education.

#### Current status:

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This paper was awarded the 2010 *VHB Best Practice Paper Award*.

## **4 In the eye of the beholder: How regulatory focus and self-efficacy interact in influencing opportunity recognition**

### **Abstract**

Although there is evidence that regulatory focus is associated with opportunity exploitation, there is a lack of research examining its role at the early stages of opportunity recognition. The present study makes two major contributions to address this gap. First, we demonstrate that entrepreneurs' promotion focus is positively related to opportunity recognition, whereas prevention focus is not significantly related to opportunity recognition. Second, integrating two theories of self-regulation – regulatory focus theory and self-efficacy theory – our findings reveal that a high promotion focus compensates for entrepreneurs' low levels of creative and entrepreneurial self-efficacy in opportunity recognition. Our study extends extant cognitive theories of opportunity recognition.

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Selected as high quality “Exemplar Paper” in the field of “Management and Entrepreneurship” by the editors of the *Journal of Business Venturing*.

# 5 Conclusion<sup>2</sup>

## 5.1 General discussion and main contributions

The goal of this thesis was to make a contribution to the management literature by investigating how organizational and entrepreneurial cognition and resulting behaviors are shaped by different cognitive foci. To this end, this thesis drew on two social cognitive theories from basic social psychology, construal level theory (Trope & Liberman, 2010) and regulatory focus theory (Higgins, 1997) which allow to derive and test hypotheses in organizational and entrepreneurial cognition regarding two different types of cognitive foci: (1) focus on abstract vs. concrete features of events or objects as a result of different dimensions of psychological distance (construal level theory) and (2) focus on positive outcomes, advancement, accomplishment, hopes, ideals, and gains vs. focus on negative outcomes, security, safety, duties, obligations, and losses (regulatory focus theory). This thesis' three main chapters each developed and tested theory on the role of these cognitive foci in the contexts of organizational behavior and entrepreneurship.

Overall, the present thesis makes the following general contributions to the management literature. First, this thesis demonstrates that an as yet neglected and underresearched phenomenon in the organizational and entrepreneurial literature – psychological distance as defined by construal level theory (Trope & Liberman, 2010) – systematically alters individuals' cognitive focus when making evaluations, judgments, and decisions in organizational and entrepreneurial settings. By integrating the concepts of social distance and temporal distance into management theory and empirically demonstrating their usefulness in explaining evaluations of individuals in organizations (i.e., leaders) and economic situations (i.e., entrepreneurial opportunities), this thesis advances the field's

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<sup>2</sup> This section is partly based on Tumasjan and Braun (2012), Tumasjan, Strobel, and Welpe (2011), and Tumasjan, Welpe, and Spörrle (2012).



understanding of organizational and entrepreneurial cognition and behavior. Whereas previous related research has neglected the influence of different levels of social distance on leadership evaluations (e.g., Mencl & May, 2009) and different levels of temporal distance on entrepreneurial opportunity evaluation (e.g., Mitchell & Shepherd, 2010), the findings of this thesis indicate that these distance dimensions need to be accounted for in organizational and entrepreneurial theory.

Second, and in a similar vein, the present thesis has demonstrated that individuals' cognitive focus in terms of gains and positive outcomes (vs. losses and negative outcomes) as conceptualized by regulatory focus theory (Higgins, 1997) is an important concept for advancing our understanding of entrepreneurial opportunity recognition. By integrating such cognitive foci into entrepreneurship theory, this thesis contributes to the cognitive perspective in entrepreneurship research in addressing one of entrepreneurship's basic questions, namely why "some persons but not others recognize opportunities for new products or services that can be profitably exploited" (Baron, 2004, p. 221). Furthermore, while previous research has often focused on one cognitive mechanism when explaining entrepreneurial phenomena (Gregoire, Corbett, & McMullen, 2011), this thesis demonstrates the usefulness of building and testing theory involving multiple cognitive mechanisms simultaneously.

On a more general level, the findings of this thesis indicate that management theory clearly benefits from integrating psychological theories into organizational and entrepreneurship research. Thereby, the present thesis contributes to a cognitive and behavioral perspective in management theory (Baron, 2004; Hodgkinson & Healey, 2008). By bringing together research and theory building on different cognitive foci, this thesis also lays the cornerstone for further management research that may build on these results in designing integrative theories of cognitive foci. Thus, future research may profit from the results of this thesis in developing a unifying theoretical framework explicating the role of different

cognitive foci for management processes and outcomes. An overarching framework would enable management scholars to overcome the fragmented accounts that single cognitive and behavioral theories provide by each highlighting separate and narrow aspects of the phenomena important to our field.

### **5.2 Summary of findings and contributions**

This thesis' empirical parts (Chapters 2-4) each build and test theory on the role of cognitive foci in different organizational and entrepreneurial contexts. The findings and contributions of each empirical chapter will be briefly summarized in the following paragraphs.

Chapter 2 departs from an empirical inconsistency found in previous research on ethical leadership (Brown & Treviño, 2006), namely the discrepancy between individuals' views of corporate leaders' ethical conduct in general vs. in their own organization. When asked about corporate leaders in general, only a tiny minority of respondents indicates trust in corporate leaders' ethical conduct, whereas when asked about the leadership of their own organization, a vast majority shows trust in their ethical conduct. Drawing on construal level theory, this chapter demonstrates that when evaluating information about moral transgression under conditions of high social distance (i.e., when asked about corporate leaders in general), individuals' cognitive focus shifts toward an abstract concept of morality which in turn blanks out individuals' considerations of situational information about the transgression's circumstance, and eventually results in relatively harsh ethical evaluations (i.e., low ethical leadership ratings). In contrast, under conditions of low social distance (i.e., when asked about corporate leaders of their own organization), individuals' cognitive focus rather shifts toward considering the concrete situational circumstances of the moral transgression, which in turn leads to less harsh ethical evaluations (i.e., comparatively higher ethical leadership). Whereas previous related research did not systematically vary distance from high to low (but rather

compared different types of distance), thereby producing inconclusive results (e.g., Mencl & May, 2009), this chapter demonstrates the usefulness of construal level theory's conceptualization of distance in predicting and explaining how social distance alters individuals' cognitive foci and in turn their leadership evaluations. Moreover, while many earlier studies have failed to explicitly consider and test for the cognitive processes underlying the effect of distance on cognitive foci (Liberman, Trope, & Stephan, 2007), this chapter also contributes back to the basic literature (e.g., Agerström & Björklund, 2009) by explicitly specifying and testing for the intervening cognitive mechanism.

Investigating the effect of temporal rather than social distance on individuals' cognitive foci, Chapter 3 also builds on construal level theory to argue that the importance of an entrepreneurial opportunity's desirability and feasibility varies systematically as a function of temporal distance. Whereas previous research suggests that both desirability and feasibility are equally important for opportunity evaluation and exploitation intentions (e.g., Mitchell & Shepherd, 2010), this chapter's empirical studies demonstrate that the relative importance of the two attributes changes with temporal distance. Moreover, this chapter shows how taking a construal level theory approach can help to resolve empirical inconsistencies found in previous studies of opportunity evaluation (e.g., Forlani & Mullins, 2000). By integrating the concept of temporal distance into those studies' empirical results, this chapter explains how their as yet theoretically unexplained findings become plausible in light of construal level theory. This chapter's third experiment, examining the reverse connection between construal level and temporal distance, also makes a contribution to the basic construal level theoretical research by demonstrating that different levels of desirability and feasibility also entail seeing different temporal distances as proper for acting on an opportunity.

Tapping into another class of cognitive foci, Chapter 4 investigates how entrepreneurs' regulatory focus influences opportunity recognition. While previous related research building

on regulatory focus theory has mostly remained conceptual in nature (Baron, 2002; Brockner, Higgins, & Low, 2004), the present research empirically demonstrates that a promotion focus positively impacts opportunity recognition, while no significant effect was found for prevention focus. In contrast to a prior study that investigates the role of regulatory focus in the relatively late entrepreneurial phase of opportunity exploitation (Hmieleski & Baron, 2008), this chapter examines regulatory focus in the early phase of opportunity recognition concurrently responding to calls for examining opportunity recognition in pre-institutional settings (Davidsson & Honig, 2003). Moreover, this chapter develops and tests theory on the compensating role of promotion focus for entrepreneurs' self-efficacy. Whereas previous research (e.g., Bryant, 2007) has implicitly assumed additive effects of regulatory focus and self-efficacy and has remained exploratory in nature, this chapter tests and finds both mechanisms' compensatory interaction in a quantitative research design that overcomes methodological problems of previous related research (Gregoire, Shepherd, & Lambert, 2010).

### **5.3 Implications for practice**

Overall, this thesis also offers a number of practical implications. First, the results have demonstrated that both social and temporal distance systematically alter individuals' evaluations in an organizational and an entrepreneurial setting. Thus, practitioners need to become aware of these influences when making decisions for socially and temporally near vs. distant entities. For instance, when evaluating socially distant (vs. near) persons, evaluators' cognitive focus has been shown to be directed toward relatively abstract, primary, and superordinate features of this person and her behavior. As a consequence, evaluators may have a stronger tendency to judge a socially distant person based on abstract features (e.g., abstract principles or stable dispositional characteristics) than based on concrete situational circumstances that may be responsible for this person's behavior (see also Nussbaum, Trope,

& Liberman, 2003). In turn, this may lead to biased decisions, since the evaluator may fail to appropriately take into account circumstantial information and therefore the evaluator's decision may be based on overly simplistic dispositional explanations. Since organizational practitioners have to deal with socially distant persons on a daily basis when communicating with supervisors, subordinates, and clients, organizations need to incorporate measures to mitigate such biased decision making. For example, personnel trainings for managers could include practical exercises where the participants need to evaluate socially near vs. distant individuals (e.g., recent hires from their own business unit vs. from a different unit) based on the same information. The resulting differences that may be observed in these evaluations can then be critically discussed with the participants to direct their awareness toward the cognitive biases emerging from social distance.

Second, in a similar vein, this thesis has demonstrated that individuals' evaluations of entrepreneurial opportunities are altered by temporal distance. When evaluating temporally distant vs. near opportunities (e.g., an opportunity that can be exploited immediately vs. in a year from now), entrepreneurs and managers need to be sensitive to the fact that their decisions may be biased toward the opportunity's desirability, while neglecting the opportunity's feasibility. Therefore, organizational and entrepreneurship trainings may be well advised to practically demonstrate these biases to managers and (potential) entrepreneurs using entrepreneurial opportunity scenarios. When managers and entrepreneurs gain a firsthand experience of such cognitive biases, they may be more likely to transfer this knowledge into their everyday decision making. It is important to note that due to the similar effects that can be expected across all four dimensions of psychological distance as conceptualized by construal level theory (Trope & Liberman, 2010), the measures described above can also be useful for situations involving spatial distance (e.g., evaluations of individuals working in the same location vs. in a far away subsidiary or potential opportunities in a spatially near vs. distant location). Especially in organizations relying on

distributed or virtual teams, where individuals' work environment is typically characterized by combinations of high spatial, social, and temporal distance (Welppe, Tumasjan, & Strobel, 2010), such interventions may be fruitfully applied to mitigate the effects of these distance dimensions.

Third, this thesis has also demonstrated that another form of cognitive focus, promotion vs. prevention focus as conceptualized by regulatory focus theory (Higgins, 1997), significantly influences entrepreneurs' cognition and behavior. In particular, this thesis' results indicate that a high dispositional promotion focus has a positive impact on opportunity recognition and that a high promotion focus may compensate for entrepreneurs' low levels of self-efficacy. Therefore, when selecting managers for positions involving high demands in recognizing entrepreneurial opportunities, organizations may include measures of regulatory focus in their selection procedures to improve personnel selection decisions. Furthermore, hiring managers that exhibit higher levels of promotion focus has the additional advantage that such managers may also induce higher levels of creativity in their subordinates through their leadership (Wu, McMullen, Neubert, & Yi, 2008). Since regulatory focus can be trained and induced in individuals (Friedman & Förster, 2001), organizations may supplement their trainings for such managers with interventions designed to enhance their promotion focus. Similarly, entrepreneurship educators may also include learning materials intended to cultivate a promotion focus in opportunity recognition trainings to assist (potential) entrepreneurs with their startup projects. When individuals planning to start a new venture are made aware of the different cognitive foci that influence their judgment and evaluation, they may gain a better understanding of their own cognitive processes and thus may use this knowledge to critically reflect their decisions.

In sum, the present thesis demonstrates that cognitive foci have major implications for organizational and entrepreneurial practice that managers and entrepreneurs need to be aware

of, but may also intentionally apply to improve decision making quality and, in turn, organizational outcomes.

### **5.4 Directions for future research**

The results of this thesis have demonstrated the usefulness of cognitive foci as conceptualized by construal level theory and regulatory focus theory in explaining and predicting organizational and entrepreneurial cognition and behavior. The findings obtained in this research offer several directions for future research which will be outlined in the following paragraphs.

First, while spatial distance is ubiquitous in today's working environment (e.g., distributed teams, working for clients abroad, investing in new ventures in other countries; Picot, Reichwald, & Wigand, 2008; Picot, Ripperger, & Wolf, 1996), there is still a lack of research systematically investigating its implications for individuals' evaluations and decision making. In addition, even within basic research on construal level theory, spatial distance has received comparatively little attention (Trope & Liberman, 2010). In their review article on construal level theory, Liberman et al. (2007) suggest that with increasing spatial distance individuals should be more likely to base evaluations and predictions on high-level rather than low-level construals, whereas with decreasing distance they should be more prone to base predictions on low-level rather than high-level construals. Thus, it may be interesting to further investigate whether individuals' (e.g., top managers or entrepreneurs) investment decisions, given an opportunity in distant countries, would be systematically stronger influenced by its abstract features (e.g., desirability; a high-level construal) than by its concrete features (e.g., feasibility; a low-level construal). Given such a result further research could design debiasing techniques that can help to mitigate this effect.

Second, future research could investigate whether and how leaders' evaluations of team members' work is influenced by spatial distance (e.g., a team currently staffed overseas

vs. in the local head quarter). When leaders evaluate team members in high vs. in low spatial distance, construal level theory would predict that in higher spatial distance central characteristics (constituting high-level construals) of team members' work (e.g., content of a presentation) should have a stronger influence on leaders' evaluations than in lower distance, whereas peripheral characteristics (constituting low-level construals; e.g., formatting of a presentation) should be relatively more important for leaders' evaluations in lower spatial distance rather than in higher distance. Thus, this finding would likewise imply a systematic distance bias that managers need to be aware of.

Third, tapping into team structures and team composition, which is an important topic in both organizational behavior and entrepreneurship (e.g., Amason, Shrader, & Tompson, 2006; LePine, 2003), research could investigate how spatial distance influences individuals' preferences for higher vs. lower levels of hierarchy in teams. Previous research has demonstrated that abstract thinking (i.e., concentrating on high-level construals) leads individuals to exhibit a greater proclivity for high power roles (Smith, Wigboldus, & Dijksterhuis, 2008). Building on this result, it would be interesting to further investigate whether in high spatial distance (associated with more abstract, high-level construal thinking) leaders may have a systematically higher preference for structuring or composing a team along high rather than low hierarchical differences between team members than in low spatial distance (associated with more concrete, low-level construal thinking). Hence, such a result would be especially interesting for organizations in which staffing decisions are made for highly distant locations and could be the basis for developing corresponding debiasing techniques.

Fourth, in the fields of entrepreneurship and innovation management, there is a large stream of research investigating the antecedents and consequences of incremental vs. radical innovation for firm success (e.g., Elfring & Hulsink, 2003; McDermott & O'Connor, 2002).



For instance, prior research indicates that it is often a challenge in firms to receive support for radical innovation (Dougherty & Hardy, 1996). Interestingly, construal level theory research has found that novel objects or ideas (characteristic for radical innovation) constitute abstract, high-level construals, whereas familiar objects or ideas (characteristic for incremental innovation) constitute concrete, low-level construals (Förster, Liberman, & Shapira, 2009). Since increasing distance increases abstraction (i.e., leads to a focus on high-level construals), it would be interesting to investigate whether radical innovations would be evaluated more positively from high distance (e.g., spatial or temporal distance) rather than low distance, whereas incremental innovations would be evaluated more positively from low rather than high distance. Such a finding would imply that, for instance, managers may systematically judge radical innovations developed in high distance (e.g., far away overseas company branch) more positively than radical innovations developed in low distance (e.g., close company branch).

Fifth, spatial and social distance have both been demonstrated to enhance creativity in recent basic social psychological research (e.g., Jia, Hirt, & Karpen, 2009; Polman & Emich, 2011). Since opportunity recognition is often described as a creative process (e.g., Lumpkin & Lichtenstein, 2005; Ward, 2004), it would be interesting to investigate whether opportunity recognition may also be enhanced by thinking about entrepreneurial opportunities from a high spatial distance perspective (e.g., considering opportunities in a faraway place) or a high social distance perspective (e.g., thinking about opportunities from a third person perspective). If opportunity recognition may be enhanced by such an intervention, this technique could also be applied in entrepreneurship courses when individuals are trained on how to conceive of new opportunities.

Sixth, in terms of regulatory focus, this thesis presents the first empirical evidence demonstrating that promotion focus has a positive influence on the early entrepreneurial stage

of opportunity recognition. Moreover, this research is one of the first to integrate two major self-regulatory mechanisms investigated in prior entrepreneurship research, regulatory focus and self-efficacy, and theorize on their joint influence. Further research may build on these results by systematically building an integrative theoretical framework of entrepreneurial self-regulation. As yet, there is a lack of knowledge on the self-regulation of entrepreneurs with most research focusing on regulatory focus or self-efficacy, while often studying them in separation (Bryant, 2007). However, while such research is an important first step in understanding how entrepreneurs regulate themselves to achieve their goals, it does not provide an integrative framework explicating the role of self-regulatory strategies that entrepreneurs use for building and growing their ventures. For instance, future research may build and test theory on the interaction of different self-regulatory mechanisms during the major stages of the entrepreneurial process (i.e., opportunity recognition, opportunity evaluation, opportunity exploitation; Shane & Venkataraman, 2000). Based on the evidence obtained in the present thesis, it is plausible to derive that regulatory focus and self-efficacy may also compensate for each other in the phases of opportunity evaluation and exploitation. Moreover, it may be interesting to additionally examine the role of emotion regulation vis-à-vis cognitive self-regulatory mechanisms (such as regulatory focus and self-efficacy). Previous research suggests that emotion regulation may decrease strain in organizational members (e.g., service agents; Cote, 2005). Since entrepreneurs often experience extraordinarily high levels of pressure and uncertainty (Baron, 2010) they likewise need self-regulatory strategies to cope with these adverse factors (Patzelt & Shepherd, 2011). However, as yet there is no integrative research explicating the ways in which entrepreneurs' cognitive and emotional self-regulation strategies work together in helping to cope with the strain produced from the unique work design features characterizing the different tasks of entrepreneurs (Baron, 2010).

Finally, future research may examine how cognitive and emotional self-regulation functions in entrepreneurial teams. Recent research in organizational behavior suggests that a lack of individuals' self-regulation may be compensated for by colleagues' or supervisors' social support or feedback (Strobel, Tumasjan, & Welppe, 2012). Hence, it is plausible to assume that entrepreneurial team members may support each other in their self-regulatory efforts. For instance, if one team member experiences a lack of motivational "fuel" for a specific task or period, this team member's self-regulatory lack may be compensated for by another team member temporarily providing this motivational "fuel", and who in return may receive reciprocal help from the former team member in the future (Blatt, 2009).

In conclusion, across multiple empirical studies, this thesis provides evidence demonstrating the usefulness of integrating cognitive foci into organizational and entrepreneurship theory. The results of the present research suggest that cognitive foci play a significant role in influencing individuals' cognitions and behaviors in both organizational and entrepreneurial settings. Offering several directions for future research, the present work intends to stimulate further efforts helping to understand how cognitive foci shape individuals' thoughts, emotions, and behaviors in established and new organizations.

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## **Appendix**

### Appendix A (Reference for chapter 2)

Tumasjan, A., Strobel, M., & Welp, I. (2011). Ethical leadership evaluations after moral transgression: Social distance makes the difference. *Journal of Business Ethics*, 99, 609–622. doi: 10.1007/s10551-010-0671-2

### Appendix B (Reference for chapter 3)

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### Appendix C (Reference for chapter 4)

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