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Doctoral Thesis Advisor: Jill Waymire Paine, Ph.D.

ABSTRACT

This dissertation addresses challenges presented by increasingly complex creativity research. In three chapters, it aims to synthesise several complexities of workplace creativity, including the output, the processes and interaction with the context. The first chapter is theoretical and offers a model of why and how employees create solutions with differing facets of novelty and usefulness. It draws on regulatory focus theory to discuss and distinguish between individual differences in promotion and prevention focus and introduce three self-regulation paths in the creative process. Further, the theoretical model accounts for interacting factors at the contextual level—and distinguishes their effect on creativity based on the degree of alignment with an employee's goal-orientation strategy. The second chapter is empirical and focuses on the core psychological processes preceding creative output. Its findings suggest that the impact of promotion focus on creativity is mainly on the novelty side of creativity, while prevention focus in itself has no relation to either creativity facet. The final study investigates when and how the organizational context boosts or hinders employee creativity. It argues that the match between an individual and his/her organization's collective regulatory focus orientation influences the individual´s ability to explore or exploit ideas. In two studies, the chapter shows that the regulatory fit to the perceived and actual (collective) organizational regulatory focus influences an employee's ability to become creative.

Together, the three chapters contribute to creativity literature in several ways. By offering a theoretical model of workplace creativity, articulating the emotional-cognitive processes, it answers the call for theoretical work that specifies how diverse antecedents jointly affect creativity. Second, by examining the manner in which the different regulatory foci of individuals affect novelty and usefulness, it

offers a refined view of emerging research on workplace creativity comprised of two distinct dimensions. Finally, by offering an organisational framework to help understand the underlying mechanisms of the creative behavior of individuals in organizations, this dissertation contributes to future empirical research investigating the mechanisms of interacting factors.

RESUMEN

Esta disertación estudia los retos de las investigaciones creativas cada vez más complejas. En tres capítulos se intenta sintetizar varias complejidades de la creatividad en el lugar de trabajo, que abarcan los resultados, los procesos y la interacción con el contexto. El primer capítulo es teórico y ofrece un modelo de por qué y cómo los empleados crean soluciones con diferentes facetas de novedad y utilidad. Se basa en la teoría del enfoque regulatorio para discutir y distinguir entre las diferencias individuales en el enfoque de promoción y prevención y para introducir tres vías de autorregulación en el proceso creativo. Además, el modelo teórico tiene en cuenta los factores de interacción a nivel contextual y distingue su efecto sobre la creatividad en función del grado de alineación con la estrategia de orientación de objetivos del empleado. El segundo capítulo es empírico y se centra en los procesos psicológicos básicos que preceden al resultado de la creatividad. Sus conclusiones sugieren que el impacto de la promoción en la creatividad se centra principalmente en el lado de la novedad de la creatividad, mientras que el enfoque de la prevención en sí mismo no tiene relación con ninguna de las dos facetas de la creatividad. El estudio final investiga cuándo y cómo el contexto organizacional estimula u obstaculiza la creatividad de los empleados. Argumenta que la coincidencia entre la orientación de un individuo y el enfoque regulatorio colectivo de su organización influye en la capacidad de explorar o explotar ideas. En dos estudios, el capítulo muestra que el ajuste regulatorio al enfoque regulatorio organizacional percibido y real (colectivo) influye en la capacidad de un empleado para ser creativo.

Juntos, los tres capítulos contribuyen a la literatura de la creatividad de varias maneras. Al ofrecer un modelo teórico de creatividad en el lugar de trabajo, que

articule los procesos emocionales-cognitivos a los que responde, se requiere un trabajo teórico que especifique cómo los diversos antecedentes afectan conjuntamente a la creatividad. En segundo lugar, al examinar la forma en que los diferentes enfoques reglamentarios de los individuos afectan a la novedad y la utilidad, ofrece una visión refinada de la investigación emergente sobre la creatividad en el lugar de trabajo que comprende dos dimensiones separadas. Finalmente, al ofrecer un marco organizativo para entender los mecanismos subyacentes del comportamiento creativo de los individuos en las organizaciones, esta disertación contribuye a la investigación empírica futura sobre los mecanismos de interacción de los factores.

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For Samuel

Die Gedanken sind frei, wer kann sie erraten,

Sie fliegen vorbei wie nächtliche Schatten.

Kein Mensch kann sie wissen, kein Jäger sie schießen

Mit Pulver und Blei: Die Gedanken sind frei!

Thoughts are free, who can guess them?

They fly by like nocturnal shadows.

No person can know them, no hunter can shoot them

With powder and lead: Thoughts are free!

(German Song - Hoffmann von Fallersleben in 1842)

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INTRODUCTION

Few topics are currently as much discussed in both the academic and business worlds as creativity. Businesses aspire to manage it, while academics try to explain it. Yet, both fields often struggle at the sheer complexity to grasp how and why creativity emerges in the workplace. Unsurprisingly, creativity research involves ever more complex angles and factors in the process (Zhou & Hoever, 2014). Studies on creativity now span every level from the micro-psychological level of individual creativity, to the macro- system level of innovation of entire societies (Anderson, Potočnik & Zhou 2014). In parallel with the widening research domain of workplace creativity, often defined "as the development of ideas about products, practices, services or procedures that are 1) novel and 2) potentially useful to the organization", are the increasing number of lenses studying the underlying mechanisms. It appears that despite our increasing knowledge of the factors and the role of context, our overall understanding of creativity at work remains fragmented around the particular lens an author chooses. This is problematic, because not only does the study of creativity appear ever more complex, but also because we seem to move away from a general understanding of creativity in the workplace (Hoever and Zhou, 2014).

This dissertation addresses challenges of increasingly complex creativity research. It synthesizes several complexities of workplace creativity, covering the output, the processes and the interaction with the context. To build my core model, I have recognized two distinct dimensions of creativity: novelty and usefulness. Novelty refers to an idea, product or service that is new or original, while usefulness refers to something that is practical, appropriate or valued distinct (Sullivan and Ford 2010). This dissertation argues that different underlying mechanisms facilitate the degree to which creativity facets are useful or novel. Throughout the chapters, I use

regulatory focus theory (Higgins, 1998), to build a model in which individual differences in goal orientation predict the creative output as combinations of novelty and usefulness. In addition, regulatory focus theory provides a lens to elucidate the underlying psychological mechanisms and interaction with the context. Overall, the dissertation consists of three chapters, each with several theoretical and empirical contributions.

Chapter I proposes a new theoretical model demonstrating why and how employees create solutions with different facets of novelty and usefulness. The model draws upon regulatory focus theory to synthesize a multidimensional view on the creative output, the processes and the interaction with the context. I discuss and distinguish between individual differences in promotion and prevention focus and build on Dual Process Models of Creativity to introduce three self-regulating paths in the creative process. For each path, the chapter discusses the motivational principles through which creativity emerges and discusses outcomes as degrees of novelty and usefulness. Further, the theoretical model accounts for interacting factors at the contextual level, and distinguishes their effect on creativity based on the degree of alignment with the employee's goal orientation strategy.

Chapter II tests part of the model at the individual level by focusing on the core psychological processes preceding the creativity output. Scholars increasingly recognize that while a variety of conditions can allow idea generation in the workplace, they can also affect distinct facets of the creative output (for a review, see Zhou & Hoever, 2014). However, our understanding of *how* individuals create solutions with different degrees of novelty and usefulness remains limited. In two studies, a field study and an experimental study, this chapter addresses this challenge. It examines how individual differences in regulatory focus facilitate distinct

facets of creativity via separate cognitive mechanisms. In addition, this chapter of the dissertation investigates how the regulatory focus orientations of promotion and prevention together may influence the degree to which creativity outputs are more novel and/or useful.

Chapter III focuses on the interaction with the context. In two field studies, it investigates how and when the organizational context influences a person's ability to generate ideas. Considerable research has shown that the context in which employees work can boost, hinder or change an employee´s idea generation process (George & Zhou, 2007; Kark, Dijk & Vashdi, 2018; Wallace, Butts, Johnson, Stevens & Smith 2016). Although research identified various cross-level factors and processes that interact with an employee's creativity, to date the underlying mechanisms are unclear. The aim of this dissertation chapter is to address this issue by examining how the organizational context influences an individual´s strategy to generate ideas. As such, this chapter argues that a match between an individual and his or her organizational regulatory focus orientation, influences the individual´s ability to generate novel or useful solutions. Hence the chapter provides a more granular perspective on the interplay between individual and contextual factors that shape workplace creativity.

Overall, this dissertation offers an integrative model of individual workplace creativity, as it considers the complex interplay between motivational, cognitive and contextual factors. By doing so, it answers calls to move toward identifying "the full range of individual differences and contextual factors for both creativity and innovation" (Anderson et al. 2014:1309).

INTRODUCCIÓN

Pocos son los temas que actualmente se discuten tanto en el mundo académico como en el mundo de los negocios como la creatividad. Las empresas aspiran a gestionarlo, mientras que los académicos intentan explicarlo. Sin embargo, ambos campos a menudo se esfuerzan por comprender la complejidad de cómo y por qué surge la creatividad en el lugar de trabajo. No es de extrañar que la investigación de la creatividad involucre ángulos y factores cada vez más complejos en el proceso (Zhou & Hoever, 2014). Los estudios sobre la creatividad abarcan ahora todos los niveles, desde el nivel micropsicológico de la creatividad individual hasta el nivel macro-sistema de innovación de sociedades enteras (Anderson, Potočnik y Zhou 2014). Paralelamente al campo de investigación cada vez más amplio de la creatividad en el lugar de trabajo, que a menudo se define como "el desarrollo de ideas sobre productos, prácticas, servicios o procedimientos que son 1) novedosos y 2) potencialmente útiles para la organización", se incrementa el número de lentes para estudiar los mecanismos subyacentes. Parece que a pesar de nuestro creciente conocimiento de los factores y del papel del contexto, nuestra comprensión general de la creatividad en el trabajo sigue estando fragmentada en torno a la lente que el autor elige. Esto es problemático, porque no sólo el estudio de la creatividad parece cada vez más complejo, sino también porque parece que nos alejamos de una comprensión general de la creatividad en el lugar de trabajo (Hoever y Zhou, 2014).

Esta disertación aborda los retos de una investigación de la creatividad cada vez más compleja. Sintetiza varias complejidades de la creatividad en el lugar de trabajo, abarcando los resultados, los procesos y la interacción con el contexto. Para construir mi modelo central, reconozco dos dimensiones separadas de la creatividad:

Novedad y utilidad. La novedad se refiere a una idea, producto o servicio que es nuevo u original, mientras que la utilidad se refiere a algo que es práctico, apropiado o distinto (Sullivan y Ford 2010). Esta tesis argumenta que los diferentes mecanismos subyacentes facilitan el grado en que las facetas creativas son útiles o novedosas. A lo largo de mis capítulos, utilizo la teoría del enfoque regulatorio ('Regulatory Focus Theory'; Higgins, 1998), para construir un modelo en el que las diferencias individuales en la orientación de los objetivos predicen la producción creativa como combinaciones de Novedad y Utilidad. Además, la teoría del enfoque regulador proporciona una lente para dilucidar los mecanismos psicológicos subyacentes y la interacción con el contexto. En general, la tesis consta de tres capítulos, cada uno con varias contribuciones teóricas y empíricas.

El capítulo I propone un nuevo modelo teórico de por qué y cómo los empleados crean soluciones con diferentes facetas de novedad y utilidad. El modelo se basa en la teoría del enfoque regulatorio para sintetizar una visión multidimensional de la producción creativa, los procesos y la interacción con el contexto. Discuto y distingo entre las diferencias individuales en el enfoque de promoción y prevención y me baso en los Modelos de Proceso Dual de Creatividad ('Dual Process Model of Creativity'; De Dreu, Baas & Nijstad, 2008) para introducir tres caminos de autorregulación en el proceso creativo. Para cada camino -el capítulo discute los principios motivacionales a través de los cuales surge la creatividad y discute los resultados como grados de novedad y utilidad. Además, el modelo teórico tiene en cuenta los factores de interacción a nivel contextual y distingue su efecto sobre la creatividad en función del grado de alineación con la estrategia de orientación de objetivos del empleado.

En el capítulo II se examina parte del modelo a nivel individual, centrándose en los procesos psicológicos básicos que preceden al producto de la creatividad. Los académicos reconocen cada vez más que si bien una variedad de condiciones pueden permitir la generación de ideas en el lugar de trabajo, también pueden afectar a distintas facetas de la producción creativa (para una revisión ver Zhou & Hoever, 2014). Sin embargo, nuestra comprensión de *cómo* los individuos crean soluciones con diferentes grados de novedad y utilidad sigue siendo limitada. En dos estudios, uno de campo y otro experimental, este capítulo aborda este desafío. Examina cómo las diferencias individuales en el enfoque regulatorio facilitan distintas facetas de la creatividad a través de mecanismos cognitivos separados. Además, este capítulo de disertación investiga cómo las orientaciones del enfoque regulatorio de la promoción y la prevención pueden influir en el grado en que los resultados de la creatividad son más novedosos y/o útiles.

El capítulo III se centra en la interacción con el contexto. En dos estudios de campo, investiga cómo y cuándo el contexto organizacional influye en la capacidad de una persona para generar ideas. Numerosas investigaciones han demostrado que el contexto en el que trabajan los empleados puede impulsar, dificultar o cambiar un proceso de generación de ideas en employee´s (George & Zhou, 2007; Kark, Dijk & Vashdi, 2018; Wallace, Butts, Johnson, Stevens & Smith, 2016). Aunque la investigación identificó varios factores y procesos a varios niveles que interactúan con la creatividad de un empleado, hasta la fecha los mecanismos subyacentes no están claros. El objetivo de este capítulo de disertación es abordar este desafío examinando cómo el contexto organizacional influye en una estrategia de generación de ideas de individual´s Como tal, este capítulo argumenta que la coincidencia entre un individuo y su orientación hacia el enfoque regulatorio de la

organización influye en la capacidad de individual´s para generar soluciones nuevas o útiles. Por lo tanto, el capítulo proporciona una visión más detallada sobre la interacción entre los factores individuales y contextuales que dan forma a la creatividad en el lugar de trabajo.

En general, esta tesis ofrece un modelo integrador de la creatividad individual en el lugar de trabajo, ya que considera la compleja interacción entre los factores motivacionales, cognitivos y contextuales. De este modo, responde a las llamadas para avanzar hacia la identificación de "toda la gama de diferencias individuales y factores contextuales tanto para la creatividad como para la innovación". (Anderson et al. 2014:1309).

CHAPTER I - INDIVIDUAL DIFFERENCES AND WORKPLACE CREATIVITY: A SELF-REGULATION MODEL TO EXPLAIN NOVELTY AND USEFULNESS

ABSTRACT

Despite recognizing that workplace creativity consists of different facets of novelty and usefulness, researchers have rarely discussed why and how employees create such ideas in the workplace. I synthesize complexities of workplace creativity and argue for a multidimensional view of the creative output, the processes and the interaction with the context. I discuss and distinguish between individual differences in promotion and prevention focus and build on Dual Process Models of Creativity to introduce three self-regulating paths in the creative process. For each path; achieving novelty, ensuring usefulness and balancing creativity facets; I articulate the primary motivation principles and resulting emotional-cognitive processes through which creativity emerges and discuss outcomes as degrees of novelty and usefulness. Further, I account for interacting factors at the contextual level—the theorized model explains when contextual factors may boost, hinder or change workplace creativity based on the degree of alignment with employee's goal orientation strategy. I conclude by discussing the implications of the model for more complex and realistic future research on creativity in the workplace.

CHAPTER I - INDIVIDUAL DIFFERENCES AND WORKPLACE CREATIVITY: A SELF REGULATION MODEL TO EXPLAIN NOVELTY AND USEFULNESS

Research made great forward strides in distinguishing how a diverse set of factors and processes jointly affect workplace creativity, often defined as "the development of ideas about products, practices, services or procedures that are 1) novel and 2) potentially useful to the organization" (Amabile, 1996). To describe what leads to novel and useful solutions, scholars often use two perspectives (Zhou & Hoever, 2014). The first is broader and highlights the interplay of individual and contextual components or factors across multiple levels (Amabile, 1996; Woodman, Sawyer & Griffin, 1993). The second, narrower perspective, focuses on the psychology of idea generation processes at the individual level. Here scholars distinguish two paths to creativity that sum up the emotional-cognitive mechanisms (Baas, Roskes, Sligte, Nijstad, & De Dreu, 2013; George & Zhou, 2007). Under both perspectives, employees thus must balance competing demands to propose creative solutions. This balance however is delicate, because the two creativity facets, novelty and usefulness relate somewhat, and each has distinct antecedents (Montag, Maerz & Baer, 2012). As a result, employees' solutions often vary on aspects of novelty and usefulness (Miron-Spektor & Breenen 2015; Zhou, Wang, Song, & Wu, 2017).

Yet, how employees create ideas that differ in their degree of novelty and usefulness is poorly understood. While scholars cluster diverse individuals into (seemingly) opposite categories and processes, they often prescribe a single creativity output (Anderson, Potočnik & Zhou, 2014). Creative solutions however "are often seen as either novel or useful but may rarely be seen as high in both dimensions" (Berg, 2014:1). Although the two perspectives allow several approaches that individuals can use to advance an idea, they don't acknowledge novelty or

usefulness. Consequently, their antecedents or mechanisms are unclear. For example, the broader componential (Amabile, 1996) or interactional models (Woodman et al., 1993) are largely silent on how the elements interrelate. The narrower psychological models, often referred to as Dual Process Creativity Models (DPCM), consider such underlying processes, but only recognize a general creativity output and see the emotional-cognitive processes as exclusive (De Dreu et al., 2008). Several studies on ambivalence, however, suggest that people can experience emotional-cognitive processes simultaneously, which can promote creativity (Evans 2008; Fong 2006; Lu, Akinola & Mason, 2017; Miron-Spektor, Gino & Argote, 2011). Finally, newer conceptual models, while highly valuable to understand the creative process of actors across different levels or contexts, also are silent on variations in creativity or on the mechanisms of co-occurring processes (Bledow, Frese, Anderson, Erez & Farr, 2009; Mainemelis, 2010; Perry-Smith & Mannucci, 2017). In summary, from a theoretical standpoint, this raises the critical question: whether and how distinct factors or processes interact and affect different facets of workplace creativity.

To answer this question, I offer a theoretical model of workplace creativity that explains why, how and when employees create solutions that are novel and useful. In line with contemporary research on workplace creativity, this paper focuses on the creative stage which refers to idea generation of individuals who develop novel and useful ideas or solutions (Anderson et al., 2014; Montag et al., 2012; Somech and Drach-Zahavy, 2013). I propose that the degree to which creative ideas are novel or useful depends on a promotional or preventive regulatory focus (Higgins, 1997), because it determines whether people maximize novelty or ensure usefulness. Via regulatory focus theory, I also delineate the distinct emotional-cognitive processes

through which individuals develop creative ideas (Johnson, Smith, Wallace, Hill & Baron, 2015; Lanaj, Chang & Johnson, 2012). Specifically, my theoretical model articulates the emotional-cognitive processes as three exemplary paths, that result from regulatory focus and shape novelty and usefulness. In conceptualizing the emotional experience on two dimensions of arousal and valence, I provide a more nuanced discussion of the effect on cognitive processes and the facets of creativity. A more granular view on the paths to creativity can thus help solve inconsistencies in the literature and answer the question of why opposite individual factors or underlying processes can lead to creativity (Baas, De Dreu & Nijstad, 2008). Importantly, whereas existing models largely depict the processes to creativity as separate (De Dreu et al., 2008), this paper argues that the processes can also work in tandem with unique effects on the creativity facets. Therefore, the model answers calls for theoretical work that specifies how diverse antecedents jointly affect creativity (Zhou & Hoever, 2014). Finally, the proposed model clarifies the interface between the person and the context, which is defined as a stimulus at a different level than the employee. My model builds on work that shows that pursuing goals in line with one's focus influences several psychological processes and behaviors in the workplace (Higgins, 2005). Regulatory focus thus becomes sensitive to the social context which influences creativity via congruence with a person's orientation (Higgins, 2005). In making this claim, my model highlights organizational factors that via fit or misfit may boost or limit the creativity facets. Hence, it offers an approach for future cross-level studies (Anderson et al., 2014).

In summary, the purpose of this article is to develop a holistic model that conceptualizes the various ways individuals drive workplace creativity. In the following, I first provide a brief overview of the theoretical underpinnings of three

critical elements of workplace creativity: the output, the underlying processes or paths, and interacting factors. I then synthesize across the three elements from a regulatory focus perspective, detailing the connections between individual differences in goal motivation and resulting facets of creativity. Third, my model articulates self-regulation processes that result from differences in regulatory focus and facilitate idea generation. Specifically, I propose that distinct emotional and cognitive experiences - summarized as three exemplary paths - can generate both helpful and harmful effects for novelty and usefulness. Lastly, I investigate the interaction of contextual factors with regulatory fit theory. The paper ends with a discussion and an outline of future research directions, which proposes dynamic models on the factors and processes across levels.

THREE ELEMENTS OF WORKPLACE CREATIVITY

My theorizing begins by addressing the theoretical underpinnings of three elements of workplace creativity: the creative output, the process and the interaction with the context. Here, I aim to integrate research that suggests a multidimensional view with facets of both novelty and usefulness, distinct but not mutually exclusive processes and varying influences of interacting factors.

Creativity dimensions and trade-offs

Most scholars view workplace creativity as the product of two components, novelty and usefulness, with its utility depending on the social domain (Amabile, 1988, 1996). Novelty describes the degree an idea, product or service is new, original, unique or unconventional. Usefulness refers to the degree an idea, product or service is practical, appropriate, feasible, valuable or effective (Montag et al., 2012; Sullivan & Ford, 2010). With existing creativity models, researchers cannot distinguish antecedents and factors that have been linked to facets of novelty or

usefulness (Berg 2014; Miron-Spektor & Beenen, 2015). Although a few notable empirical exceptions distinguish between aspects of creativity (e.g. Madjar, Greenberg & Chen‘s 2011; Venkataramani, Richter & Clarke 2014), the majority of research to date assesses creativity as a singular output, despite opposing antecedents (Anderson et al., 2014; Oldham & Cummings, 1996). A one-dimensional view, however, confounds the two creativity dimensions by summing or averaging distinct qualities into one overall score (Lichtefeld, 2008). As a result, researchers not only face difficulty to disentangle the role antecedents play for each facet but also face a criterion problem, as the criteria for what constitutes creativity may be subjective (Montag, Maertz & Baer, 2012; Zhou et al., 2017).

To illustrate why the proposed model should acknowledge two non-interchangeable dimensions of workplace creativity as novelty and usefulness, I propose three scenarios of an engineer suggesting new forms of transport. First, she proposes a useful but not very novel idea: a more fuel-effective engine which allows aircraft to fly at similar speeds but with half the fuel consumption. Second, she proposes a novel but not very useful idea: a new type of engine (e.g. Concorde) that allows an aircraft to fly at twice the speed but can only transport a few passengers due to size limitations. Finally, she suggests an idea that is both novel and useful: a completely new form of transportation (e.g. hyperloop), allowing many passengers to travel at hypersonic speeds. With existing models and measures of creativity, it would be difficult to capture if and how the three ideas differ in their facets of creativity. Consequently, researchers would not be able to distinguish the creative behavior or performance of the engineer. For instance, two items of a widely-used measure of workplace creativity do not distinguish between novelty and usefulness, as they assess the degree to which the engineer “is a good source of creative ideas” or “often

comes up with creative solutions to problems at work" (Zhou & George, 2001). The rater may perceive the first two ideas of the above example as somewhat creative and thus rate the engineer's creative behavior similar in the scenarios. This is problematic because not only would researchers have difficulties in uncovering the role factors and processes played in the generation of the three ideas, but also the measure may reflect subjective criteria of the rater's meaning of *creative* ideas (Zhou et al., 2017).

In line with theoretical models in the related innovation and organizational learning literature (Crossan & Apaydin, 2010; March, 1991), the proposed model thus acknowledges two non-interchangeable dimensions of workplace creativity as novelty and usefulness. Although, by definition, ideas must consist of both to be considered as creative, I discuss how ideas can differ in their degree of both dimensions. Inherently, those ideas, while created in the mind of the individual, are tangible enough to be perceived, evaluated and influenced by the social context. However, in this article I do not distinguish between different perceptions by others but focus on ideas considered as novel or useful by objective or normative standards (Zhou et al., 2017).

Different paths leading to creativity

Dual process models of creativity (DPCM) highlight that individuals can generate ideas via two paths, each with unique psychological dynamics (George & Zhou, 2007; Nijstad, De Dreu, Rietzschel & Baas, 2010). The models originate from the field of psychology and recognize two fundamental cognitive processes guiding thinking, decision making, reasoning and social judgments (Evans, 2008). Often described as Type 1 and Type 2, they are characterized by intuition versus rationality, and slow versus fast thinking. Building on this distinction, the DPCM

describes the underlying mechanisms by emphasizing the role that emotions play in facilitating cognitive processes in idea generation (Baas, De Dreu & Nijstad, 2011). Emotions are organized mental responses or experiences to an event or entity (Izward, 1991; Ortony, Clore & Collins, 1988), which act as perceptual lenses for interpreting the causing situation, person or event (Lerner et al., 2015). A widely used conceptualization describes emotions with two fundamental, orthogonal dimensions (Russell, 1980): its degree of pleasantness (*valence)* and its level of activation or intensity (*arousal)* (Russell & Barrett 1999; Seo, Barrett, & Bartunek, 2004). Both dimensions are bipolar with valence ranging from negative, or unpleasant, to positive, or pleasant, experience, and arousal ranging from low or deactivation, to high or activation (Oreg, Bartunek, Lee & Do, 2016). Proponents of the DPCM link both dimensions of emotions to cognitive processes in idea generation. Arousal provides the energy to engage in a creative task and sustain effort (Elliot, 1999), while "hedonic tone [valence] determines the route…through which creative fluency and originality is achieved" (De Dreu et al., 2008:740).

By recognizing the critical role of the combination of valence and arousal, scholars can explain the paradox that both pleasant and unpleasant emotions facilitate creative ideas. For example, He, Wong & Wu (2017) showed that "happy" (positive valence) versus "sad" (negative valence) music enhanced creative thinking, but only if subjects experienced high arousal. Aroused positive valence emotions (e.g., cheerfulness) stimulate creativity via cognitive flexibility, while aroused negative valence emotions (e.g., anxiety) foster creativity via cognitive persistence (De Dreu, Nijstad & Baas, 2011). On the flexibility path, individuals process information holistically, easily switch between perspectives, and consider various ideas from distinct categories (Baas et al., 2013). They generate creative ideas by accessing

remote knowledge and by combining disparate ideas into new solutions. On the persistence path, individuals invest cognitive resources to solve problems, process information systematically and generate several ideas within a few categories (Nijstad & Stroebe, 2006). A person becomes creative by accessing knowledge from a few domains and combines related ideas into new solutions. Thus, individuals can generate ideas on both paths as they combine existing elements and self-select an idea they perceive as useful and novel (Loui, 2018; Perry-Smith & Manucci, 2017).

Although consistent evidence shows that distinct neurological and psychological processes can act in parallel when individuals become creative[1] (Evans & Stanovich, 2013), dual process models implicitly argue that the paths are distinct and that individuals will pursue one *or* the other. Reviews in the neuroscience field argue that while flexible and persistent pathways to creativity are traceable to different areas of the brain, optimal creative performance nonetheless requires the interplay of both areas and thus paths (Boot, Baas, van Gaal et al., 2017). For instance, Arden, Chavez, Grazioplene & Jung (2010), in their review of 45 brain imaging studies on creative cognition, suggest that creativity emerges because of a broad set of brain areas and processes that act in tandem. Individual factors and boundary conditions influence which neurological system operates and thus why and when someone becomes creative. Similarly, Jung, Mead, Carrasco & Flores (2013) observe a lack of consistent evidence and call for scholars to isolate single mechanisms that predict how creativity emerges neurologically. The authors suggest that separate systems or

[1] Studies in the neuroscience and psychology field show that humans use both Type 1 and Type 2 cognitive processes. While each process operates in separate systems in the brain and probably developed because of distinct evolutionary demands, humans rely on both and not solely on one in problem solving (Stephens, Dunn & Hayes 2018). For simplicity, I refer to simultaneous cognitive processes as thinking, decision making, judgments and reasoning for idea generation involving both types, but I do not distinguish whether the processes occur simultaneously or sequentially. The discussion remains open as to whether individuals use both systems simultaneously, sequentially or as a mix (Diederich & Trueblood, 2018). For the brevity of the article, I exclude a discussion of the dynamics between the processes.

processes dominate for different facets of creativity. Sometimes certain brain regions are aroused and sometimes inhibited (Limb & Braun, 2008), but evidence suggests that overall creativity does not happen from a single or simplistic process. Generating creative ideas emerges from opposing cognitive processes that can act simultaneously. In addition, to date the DPCM does not link the distinct emotional-cognitive processes to facets of creativity. Several authors nonetheless call for scholars to link types of creativity output to the interplay of flexible and persistent thinking (Boot, Baas, Mühlfeld, Mayseless, de Dreu & van Gaal, 2017; Mayseless, Eran & Shamay-Tsoory 2015).

In summary, individuals become creative on two paths involving separate but at times co-occurring cognitive and neurological mechanisms. The DPCM provides the foundation for my theoretical model as it builds on decades of research in psychology to describe in detail the role emotions play in the cognitive processes to creativity (Barsade, Brief & Spataro, 2003). Nonetheless, the model originated from laboratory settings with subjects working alone on one pre-determined creativity task (De Dreu et al., 2008). For example, subjects were isolated from their context and were induced with either a positive or a negative emotional experience and then engaged in simple idea generation tasks (Baas et al., 2013; Baas et al., 2011). To my knowledge, the models were not applied to workplace settings and thus neither recognize facets of workplace creativity nor the influence of that context**.** I extend the DPCM model by acknowledging co-occurring emotional cognitive processes, linking the paths to distinct facets of creativity and (below) articulating the interaction with contextual factors.

Creativity as interaction

The creative outcome is influenced by individual differences and contextual factors (Shalley, Zhou & Oldham, 2004). Creativity "stems from the complex mosaic of individual, group, and organizational characteristics and behaviors occurring within the salient situational influences (both creativity constraining and enhancing) existing at each level of social organization" (Woodman et al.: 1993:296). To date, researchers describe those interactions at work with classification systems. However models remain silent on the underlying mechanisms of the interaction. Although models lack clarification of the processes, Zhou & Hoever's (2014) model should be underscored. It recognizes that scholars increasingly move away from simpler main-effect models to complex contingent or interactional models. The proposed framework draws from this model by assuming that the relationship between the actor and contextual factors can either hinder or enhance creativity. Individuals can catalyze "negative actor" characteristics (e.g. negative affect, avoidance motivation) to become creative with the right tools or in the right setting (Baer, 2010; Chen, Farh, Campbell-Bush, Wu & Wu 2013; González-Gómez & Richter, 2015; Pirola-Merlo & Mann 2004; Zhou & George 2001). The following section highlights why and how individual and contextual factors interact to produce creative outcomes. Specifically, I discuss how emotional-cognitive processes leading to creativity are influenced by a person's ability to regulate such processes and by the relative fit to the workplace context.

SYNTHESIZING THREE ELEMENTS OF WORKPLACE CREATIVITY WITH REGULATORY FOCUS AND FIT THEORY

The proposed model addresses three theoretical elements of workplace creativity. Two distinct and at times co-occurring psychological processes form paths

to creativity with distinct degrees of novelty and usefulness. Individual differences facilitate which process dominates, but contextual factors interact and thus influence the creative output. I argue that individual differences in goal pursuit strategy (regulatory focus) can synthesize across the elements into a holistic model. Differences in regulatory foci not only affect the degree to which ideas are novel and useful, but also determine distinct self-regulation processes, emotional and cognitive responses, to creative goals. While researchers often rely on proxy measures of creativity that assess the preceding cognitive processes (e.g. Lucas, 2016), I distinguish the emotional-cognitive mechanisms from the creative output as ideas that vary on novelty and usefulness. Thus, the proposed model (see figure 1) includes four general elements: antecedents as an employee's regulatory focus, the creativity output as novelty and usefulness, the underlying process as mediating emotional-cognitive paths, and moderators as interacting contextual factors.

Insert Figure 1 about here

Why – Regulatory focus motivates novelty and usefulness combinations

I suggest that individuals create solutions with different degrees of novelty and usefulness due to two fundamentally different self-regulatory systems toward goals – their regulatory focus. To develop this claim, I turn to regulatory focus theory, which distinguishes between two primary motivation systems that people use to achieve goals: a promotion focus concerned with eager growth toward maximizing opportunities and a prevention focus concerned with vigilant fulfillment of duties. The two regulatory systems affect motivational needs, goal type and orientation for gain or pain (Johnson et al., 2015; Zhou et al., 2017). With a promotion focus, individuals

are guided by aspirations and use approach strategies as they are sensitive to accomplished gains. Individuals with a prevention focus are driven by safety and use avoidance behaviors as they are sensitive to preventing negative outcomes. Regulatory focus can explain work outcomes such as behaviors and performance above and beyond other predictors (e.g. learning goal orientation or personality (Lanaj et al., 2012). The effect also remains significant when controlling for other relevant individual factors such as affect (e.g. Crowe & Higgins, 1997) or chronic self-identity (Johnson, Chang & Yang, 2010). Moreover, both foci not only guide the strategic means to self-regulate toward a desired form of creativity (Higgins, 1997), but also the two cognitive processes preceding creativity (Baas et al., 2011; Roese, Hur & Pennington 1999; Kammerlander, Burger, Fust & Fueglistaller, 2015; Zhou et al., 2017). As my model looks at individuals in their work team, I consider general or work-specific regulatory focus of the individual. It refers to the combination of the chronic with the enduring situational or contextual effect on regulatory focus (Tuncdogan et al., 2015). Despite the potential interaction with the context that I discuss later, the model assumes that the general regulatory focus remains stable over time.[2]

Promotion focus: Maximize opportunity for reward by accomplishing novelty. Promotion-focused individuals favor novelty over usefulness due to an intrinsic drive to maximize gains (Brockner et al., 2004; Idson, Liberman & Higgins, 2000). They are eager to attain advancement, accomplish hits and avoid misses (Higgins, 1997). For example, a promotion-focused engineer who proposes a new jet engine is likely to invent several novel ideas to ensure against omitting (potentially

[2] Regulatory focus can be chronic or situationally induced by the work environment, with both types having similar effects on work outcomes (Lanaj et al., 2012). Chronic focus results from personality and early life experiences while the situational focus is an induced psychological state (Gorman et al., 2012).

valuable) alternatives (Crowe & Higgins, 1997) and to maximize the opportunity of reward (Herzenstein et al., 2007; Tumasjan & Braun, 2012). As such, promotion-focused individuals are likely to persevere in complex creative processes as difficulties signal that expected rewards of novelty are high (Crowe & Higgins, 1997). Empirical evidence indicates that promotion focus would facilitate novel rather than useful ideas (e.g. Zhou, Hirst & Shipton 2012). Recent studies show a strong positive relationship between promotion focus and overall creativity, originality of ideas (Bittner, Bruena, & Rietzschel, 2016) and exploration of opportunities (Ahmadi, Khanagha, Berchicci & Jansen, 2017; Kammerlander et al., 2015). On the other hand, increased risk bias and a tendency for mistakes because of increased processing speed (Förster & Friedman 2001) are likely to limit useful ideas.

Proposition 1a: *High promotion focus facilitates generation of novel ideas at the expense of usefulness.*

Prevention focus: Minimize risk of failure by ensuring usefulness. Prevention-focused individuals favor attainable usefulness over novelty due to a concern for safety, responsibility, and protection (Higgins, 1997). They are sensitive to negative outcomes, act vigilantly and seek to ensure non-loss. Unlike promotion-focused individuals, the goal in idea generation is not on maximizing gains but on fulfilling expectations at a minimum level (Brockner et al., 2004; Idson et al., 2000). For example, the prevention-focused engineer is likely to commit to necessary tasks with a high likelihood of success (Zhou et al., 2014). She would vigilantly create useful solutions, because preventing failure outweighs potentially missing out on higher rewards from novel solutions. To maximize usefulness, she assesses several solutions systematically but declines highly original but risky ideas. Prevention-focused individuals prefer the status quo (Liberman, Idson, Camacho & Higgins,

1999) and likely emphasize known ideas (Herzenstein, Posavac & Brakus, 2007). Some empirical evidence suggests prevention focus fosters useful solutions at the expense of novel solutions (Tumasjan & Braun, 2012).

Such a mixed relationship to the two creativity dimensions could explain inconsistent (Baas et al., 2008) or zero effect findings of prevention focus in creativity literature (Sacramento, Fay & West, 2013). One-dimensional measures of creativity likely overlooked prevention focus´s positive relationship to the useful side of creativity. As originality is often at the center stage of creativity perception, a positive effect on usefulness may have been overshadowed by a limited effect on novelty (see Zhou et al., 2017). In addition, research that did show a positive relationship on overall creativity included necessary boundary conditions (e.g. activation as in Baas et al., 2011). For instance, Roskes (2013) showed in her dissertation that avoidance motivation was only related to novel creativity if it was functional. I discuss this necessary condition in the next section after I provide further evidence how usefulness, at the expense of novelty, dominates because of the cognitive-emotional mechanisms under prevention focus. To summarize, a prevention-focused individual proposes useful ideas to attain an ensured goal. On the other hand, a lower risk tolerance and a focus on fulfilling expectations rather than maximizing rewards are likely to hinder novelty.

Proposition 1b: *High prevention focus facilitates generation of useful ideas at the expense of novelty.*

The above discussion so far has only focused on individuals that either have a dominant promotion or prevention focus. Because both systems theoretically operate independently (Higgins 1997, 1998), some people will likely pursue creative goals with both foci. Although only a few studies discussed the effect of concurrent

motivational systems (Kammerlander, Burger, Fust & Fueglistaller, 2015; Wallace & Chen, 2006), results from meta-analyses suggest that promotion and prevention focus are only weakly related and mostly orthogonal (Gorman, Meriac, Overstreet & et al., 2012; Lanaj, Chang, & Johnson, 2012). Recently, Bilgili, Campbell, Leary-Kelly et al. (in press) discussed conceptually how both foci operate in a configurational manner and affect unique work outcomes. The authors suggest four ideal types of how promotion and prevention focus of individuals combine. Next to individuals who are high on one focus, individuals can be high or low on both foci.[3] Accordingly, a person with a simultaneous focus, high on promotion and prevention focus, would need to balance maximum goal achievement with attainability. Such balancers consider both positive and negative outcomes and hence try to pursue ambitious goals while ensuring safety. In line with recent theorizing by Rothman & Melwani (2017) the experience of such conflicting demands as positive and negative states allows an individual to consider more divergent perspectives in the decision process. The high promotion focus enables the person to persist in coming up with new ideas. Offering novel suggestions would satisfy the growth needs associated with a promotion orientation. Concurrently, the prevention system would limit fast decision making and the bias for risky solutions. The expected reward of a novel solution does not outshine the necessity for usefulness when pursuing avoidance goals (Ballard, Yeo, Neal & Farrell 2018). This helps the employee satisfy the security needs for usefulness associated with his or her prevention orientation. Although balancing the two goal orientations is likely challenging, a simultaneous focus may elicit synergies

[3] Theoretically individuals could also be low on both foci. Such 'indifferent' (Markovits, 2013) or 'chairwarmer' individuals would likely not engage in creative idea generation as they are "relatively apathetic or unmotivated to either pursue positive outcomes or evade negative outcomes" (Bilgili et al. in press). They would neither be especially motivated to achieve a goal via novelty nor to avoid failure by attaining usefulness. As creativity therefore is unlikely, I therefore do not discuss the effect of a low promotion and prevention focus further.

of both novelty and usefulness. Later, I propose the synergies result from co-occurring emotional and cognitive processes and argue they mirror ambivalence, which refers to the experience of conflicting emotions at the same time (Rothman, Pratt, Rees, & Vogus, 2017; Rothman & Melwani, 2017). However, before exploring the processes following a high promotion and prevention focus, I first isolate the emotional-cognitive mechanisms associated with each orientation.

How – Self regulation via distinct emotional-cognitive paths fosters creativity facets.

Regulatory focus not only determines a goal preference for accomplishing or securing facets of workplace creativity, but also yields emotional experiences and self-regulation to creative goals. In line with self-regulation theory, emotional experience differs for promotion or prevention focus as the emotion signals unique discrepancies to goals (Higgins, 1997). They vary with a valence and arousal dimension around an individual emotional home base[4] (Kuppens, Tuerlinckx, et al., 2017). For promotion focus, valence covaries positively with arousal. Individuals experience cheerfulness-related emotions (positive valence and high arousal) when achieving goals (Higgins, Shah, & Friedman, 1997; Roney, Higgins, & Shah, 1995). Failure to achieve ideal goals or missed opportunities are experienced with dejection-related emotions (negative valence and low arousal). In contrast, prevention-focused individuals experience quiescence-related emotions when securing a goal and agitation (negative valence and high arousal) with goal failure. Transferred to creativity, ideas do not emerge due to positive or negative emotions that are activated but rather because employees align their motivation for facets of creativity

[4] In line with self-regulation theory, mentally healthy individuals have a home-base which lies on average close to the middle of the arousal valence matrix (neither especially aroused nor an especially pleasant or unpleasant mood), as “people rarely experience strong positive and negative emotions at any given moment” (Larsen, McGraw & Cacioppo, 2001)

to the meaning of their emotional experience of valence-arousal., They then adapt how they self-regulate with flexible or persistent idea generation (Bledow, Rosing & Frese, 2013). Self-regulation of the emotional experience will trigger cognitive processes, such as thought content and type of information or decision processing (for a review see Lerner, Li, Valdesolo & Kassam, 2015). In turn, the cognitive mechanism with associated behavioral strategies has unique influences on creativity dimensions.

Combining these arguments, I explore below three exemplary paths to creativity that depend on a person´s regulatory focus (figure 2). They summarize interdependent components of emotional experience, cognition and self-regulating processes[5] that will dominate in the goal pursuit to novelty and usefulness. From a promotion focus with the goal to achieve novelty, I first describe the flexibility path, characterized by aroused positive valence emotions and divergent thinking. From a prevention focus, with the goal to ensure usefulness, I then describe the persistence paths, characterized by convergent thinking and aroused negative emotions. The third path describes an ambivalence path, with the experience of ambivalent emotions and parallel cognitive processes. It should arise from a simultaneous focus, the goal being to balance both creativity dimensions. In the later section, I discuss how the paths are impacted by contextual factors (regulatory fit) that moderate the self-regulation processes to novelty and usefulness.

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[5] The discussion remains open on the exact interface between emotion and cognition (Rothermund & Koole, 2018). For the sake of brevity of the article, I do not distinguish the interplay, whether emotions precede cognitive and decision processes, vice versa or whether they occur concurrently. In this article I refer to the paths - sometimes also referred to as elements of appraisals - as the combination of dominant emotional, cognitive and self-regulation processes that arise from individual differences, “everything an individual cares about” (Moors, Ellsworth, Scherer & Frijda, 2013). While the process on the path continues and is recursive, meaning the change of one element while influencing another, I refrain from discussing the exact sequence in idea generation.

Insert Figure 2 about here

Promotion focus to achieve novelty via energizing pleasant emotions and flexible thinking.

The emotional-cognitive mechanisms that result from a promotion focus reflect cognitive flexibility and likely benefit novelty (Friedman & Förster, 2005). Promotion-focused individuals would experience positive aroused emotions as they enjoy generating creative solutions (Amabile et al., 2005; Csikszentmihalyi, 1996). Even if creativity is stressful (Sacramento et al., 2013), they see the situation as a challenge for growth and a way to attain their ideals, leading to positive aroused emotions (e.g. excitement). Negative emotions are unlikely because the person is more resilient to potential failure after action (Itzkin et al., 2016). Also, if emotions are painful (low aroused negative valence), they would be self-regulated to positive aroused emotions (e.g. cheerfulness). Negative valence is regulated to positive valence as it is more maladaptive than high arousal (Kuppens, Oravecz, & Tuerlinck, 2010).

Those positive emotions facilitate cognitive flexibility and divergent thinking (Roney & Sorrentino, 1995), and play a crucial role in the creative process (Fredrickson 1998; Isen, Daubman, & Nowicki, 1987). In laboratory studies, positive emotions increase a person´s fluency in counting numbers and reduce the repetition of similar words. Positive emotions also boost one´s ability to create more solutions to a problem (e.g. sorting vegetables into more subgroups and more different sorting criteria). As individuals engage in divergent thinking (Beuk & Basadur, 2016), their ideas are likely to be novel. Ideas are novel because one recalls information related to success which primes additive and counterfactual thinking (Roese et al., 1999).

One can easily switch between diverse perspectives and processes, resulting in diverse solutions. New solutions are proposed by assessing knowledge from many very distant categories and by connecting ideas between diverse fields (Baas et al., 2013). Global information processing (Förster & Higgins 2005) allows the person to represent desired end states more abstractly and at a higher level. Such a combination of remote knowledge into new ideas or solutions is central in classic models of creativity (Amabile 1997) that emphasize originality.

While novelty should increase, it should be at the expense of usefulness. The emotions increase intrinsic motivation, heighten the willingness to take risks, energize goal pursuit and stimulate sustained effort in proposing solutions (Crowe & Higgins, 1997; Tsai, 2007). With a promotion focus, success feels stronger, boosting work motivation to achieve maximum outcomes (Idson, Liberman & Higgins, 2000). The positive emotions signal to the individual that the current approach of flexible idea generation for novel ideas is appropriate. Despite potential challenges, the individual will continue pursuing approach-oriented goals and persevere to suggest new ideas (George & Brief, 1996). The individual eagerly judges solutions based on intuitive reasons and feelings rather than deliberately assessing options based on facts (Avnet & Higgins 2006; Cornwell & Higgins 2016; Pham & Avnet, 2004). Information processing is global and holistic, but the person is less likely to engage in structured information processing and concrete problem representation (Friedman & Förster 2001). Combining the above argumentation and building on vast research of the DPCM, promotion focus leads to rather novel than useful ideas because of aroused, positive valence emotions associated with flexible and divergent thinking.

Proposition 2a: *High promotion focus will facilitate aroused positive valence emotions and cognitive processes of flexibility that will in turn foster generation of novel ideas at the expense of usefulness.*

Prevention focus to ensure usefulness via energizing unpleasant emotions and persistent thinking

Several studies indicate that the emotional-cognitive processes under a prevention focus resemble cognitive persistence (Baas et al., 2011; Förster et al., 2001; Idson & Higgins, 2000). Prevention-focused individuals experience emotions that vary between relaxation (positive valence and low arousal) and agitation (negative valence and high arousal). Unpleasant but aroused emotions will energize the person to invest cognitive resources into solving a problem and ultimately to lessen negative feelings (Baas et al., 2008; Baumeister, Vohs, DeWall & Zhang, 2007; Friedman & Förster, 2010). They signal a problematic situation that requires action for change (Higgins, Bond, Klein & Strauman, 1986; Idson et al., 2000). The person is more motivated to avoid agitation from failing a goal than to attain relaxation when achieving a goal. Thus, the person engages in vigilant behavior to regulate the negative valence. Because under prevention focus the emotion experienced only interacts with the magnitude of discrepancy between actual and ought self, dejection related emotions with low arousal are unlikely (Higgins, Shah & Friedman, 1997). In simpler words, instead of low-energy depressive emotions, the actor is likely to experience unpleasant but energizing emotions such as anxiety.

As research suggests, the emotional experiences under prevention focus foster persistence and convergent thinking, I argue creativity will reflect usefulness instead of novelty. In line with the DPCM, negative aroused emotions spark envisioning, more accurate problem solving, focused attention and systematic processing (Forgas

& Locke, 2005). Individuals process information locally and in concrete knowledge domains (Friedman & Förster, 2005; Higgins & Förster, 2005). Their thinking is subtractive and counterfactual while they work toward a concrete desired goal with improved analytical problem solving (Markman, Lindberg, Kray & Galinisky, 2007). For a given task, a person systematically assesses information to generate many different ideas in a few categories (Nijstad & Stroebe, 2006). Furthermore, with a prevention focus, one prefers facts over feelings, and one uses reason to deliberately judge a creative solution (Avnet & Higgins, 2006; Pham & Avnet, 2004). At the same time, novelty is less likely, as negative aroused emotions limit fluency in finding categories and increase repetition of similar words. Searching for solutions is incremental (Newell & Simon, 1972) and remains within the same category. Bindl, Parker, Totterdell & Hagger-Johnson (2012), for example, showed that people with negative aroused emotions, despite envisioning new ideas, were unable to follow up on proactive behaviors. Planning, enacting and reflecting on ideas were unlikely, which suggests a person with a negative emotion is unable to translate initial original thoughts into actual novel solutions. To illustrate, the engineer working on a jet engine persistently assesses solutions and drops ideas that do not fit to the concrete domain of commercial airlines. Foremost, she considers the use of the engine in her local industry and disregards novel solutions that do not fit into this domain. The engineer prefers usefulness over novelty because to her, the negative emotion signals failure, which must be avoided (Schwarz, 2000). Her primary motivation is to avoid the pain of mistakes. Thus, she self-regulates her anxious experience with vigilant search rather than relying on heuristics to secure useful solutions and return to a home base of relaxation.

Proposition 2b: *High prevention focus will facilitate aroused negative valence emotions and cognitive processes of persistence that will, in turn, foster the generation of useful ideas at the expense of novelty.*

Both foci to balance creativity facets with ambivalent emotions and dual thinking

With a high promotion and high prevention focus, dissimilar emotional-cognitive processes likely co-occur and are experienced as mixed emotions. In line with the DPCM, mixed emotions emerge because promotion and prevention focus lead to creativity via aroused emotions that however differ in valence (Baas et al., 2011). In a similar logic, someone with both foci should experience an aroused pleasant and unpleasant state. The person would need to balance the hope for growth from the promotion focus with the fear of failure from the prevention focus, which would result in mixed pleasant and unpleasant feelings (Roseman, 2017). Positive valence would signal that novelty is safe, while negative valence would signal one should be careful to include realistic or useful solutions (Rees et al., 2013). High arousal provides the energy to engage and persist in creativity. People cultivate such ambivalence in complex and uncertain situations to self-protect from the threat of failure (Reich & Wheeler, 2016). Despite the current lack of clear definitions for ambivalence (Larsen, 2017), scholars define it as a state in which individuals experience cognition or emotions simultaneously as positive and negative (Harreveld, Nohlen & Schneider, 2015; Rothman & Melwani, 2017).

With both foci, the individual will use flexible and persistence thinking to "simultaneously acknowledge and embrace opposing orientations, and thereby strive for a course of action that honors both," (Ashforth et al., 2014, p. 13). The experience of ambivalence signals to the individual an unusual environment (Schwarz & Clore,

1983) where creative ideas are needed. Such diversified experiences allow employees to create new links between seemingly contradictory elements of solutions (Ritter, Damian, et al., 2012). The beneficial effect of ambivalence likely stems from activation of neural regions that integrate disparate and competing demands (Luttrell et al., 2016). Moreover, it expands the breadth of cognitive strategies (Fong, 2006), enhances judgment accuracy, and the number of proposed alternatives to a problem (Rees, Rothman, Lehavy & Sanchez-Burks, 2013). Miron-Spektor & Breenen (2015), for example, showed that individuals high on learning but also performance achievement goals generated new product ideas via simultaneously engaging in flexibility and persistence. Such simultaneous and not one-or-the-other thinking was essential for creative ideas high on both novelty and usefulness. Also, Berg (2014) showed that individuals who combined familiar and new thought content could balance creativity facets. In summary, because individuals with a simultaneous focus need to balance the competing needs of their prevention and promotion systems, they likely experience positive and negative aroused emotions. Such ambivalence would enhance both cognitive processes, facilitating novelty and usefulness.

Proposition 3: *Simultaneous high promotion and prevention foci will facilitate ambivalence, mixed valence highly aroused emotions, and cognitive processes of both flexibility and persistence that will, in turn, foster generation of novel and useful ideas.*

When – Regulatory (mis-) fit theory disentangles the effect of interacting contextual factors

Studies increasingly recognize that contextual factors jointly impact workplace creativity in a complex interplay (Hoever & Zhou, 2014). In the following, I propose

that many of those factors affect the way individuals self-regulate toward their creative goals. I suggest regulatory fit at the contextual level can explain when factors limit or change novelty and usefulness.

Regulatory fit theory is an effective lens to clarify the interplay of context with the individual, because it clarifies how conditions change the effects of promotion and prevention focus. I argue regulatory fit to the context strengthens the trade-off between novelty and usefulness. Here the context is defined as a stimulus at a different level than the employee. When people pursue their goal in a manner that suits their regulatory orientation, they experience value from fit (Higgins, 2006). They experience fit as “feeling right” about their goal pursuit strategy. The influence on creativity likely mirrors its effects on work performance in other settings (for a review, see Johnson et al., 2015). First, if the organizational context matches an employee´s regulatory focus, then primary motivation to a creative goal would strengthen. Fit increases engagement and reactions toward the means that facilitate a goal (Cesario et al., 2004; Higgins, 2000; Higgins et al., 1994). The initial creative behavior reinforces as task performance and persistence improves (Förster, Higgins & Idson, 1998; Higgins 2000). Second, regulatory fit boosts the strength of an experienced emotion. Although it does not recolor the emotion, e.g. sad people will not become happy; it increases its contrast, e.g. sad people will be sadder. Emotions which act as people’s evaluations intensify and reinforce original reactions (Camacho, Higgins & Luger 2003). Third, regulatory fit enhances the cognitive processes leading to creativity. It increases processing fluency, effective risk assessment and goal-directed behavior in complex situations (Cesario et al., 2004; Higgins, Roney, Crowe & Hymes, 1994; Lee & Aaker, 2004). Employees who can use their primary problem-

solving strategies are less overwhelmed and more effective (Byron, Peterson, Zhang & LePine 2016).

To summarize, a context allowing regulatory fit would activate effective self-regulation via flexible and persistent idea generation for novelty or usefulness. Neither the direction of emotional experience nor the dominant cognitive processes change. The tendency for risk assessment and risk-taking behavior strengthens, but the inclination remains unchanged (Avnet & Higgins, 2006; Itzkin, Dijk & Azar, 2016). In the following, I specify examples of predictors that interact with idea generation for the different foci via regulatory fit.

Predictors of regulatory fit with a promotion or prevention focus

Various studies show the tasks, the physical, and social environment can emphasize prevention or promotion goal pursuit separately (Johnson et al., 2015). A workplace in which employees can eagerly use strategies in decision-making and can pursue multiple risky goals to ensure gains would fit to promotion-focused individuals. In contrast, a workplace fits employees with a prevention focus if they can use vigilant strategies and pursue few goals to ensure against losses with a cautious or systematic approach (Higgins, 2000). Thus, the interactive effect on creativity of the context would not be universal but depend on the match to the employee´s goal orientation (Hoever & Zhou, 2014). For example, while creative tasks in organizations can match both foci (Brockner & Higgins, 2004), tasks early in the early stages of idea generation, such as ideation, relate to a promotion focus, while later tasks such as synthesizing relate to a prevention focus (Kröper, Fay, Lindberg, & Meinel 2011). Similar effects that differ between both foci also operate at other contextual levels. Wallace et al. (2016), showed how an involvement work climate had a differential effect for both foci on the ability of employees to suggest original and useful ideas. It

had no effect on prevention focus but substantially boosted ideas for promotion-focused employees. It delivered the "appropriate fit for the employee…by providing opportunities to meet needs for autonomous motivation" (pg.17). Regulatory fit can also explain why the influence of leadership on creativity varies across studies (for a review, see Mainemelis, Kark & Epitropaki, 2015). Studies, for example, show that while transformational leadership often improves an actor's creativity (Rickards, Chen, & Moger, 2001), at times transactional leadership is also beneficial (Herrmann & Felfe, 2014; Rosing, Frese & Bausch, 2011). Transformational leadership emphasizes the mission or common goals and matches to the quest for novelty of promotion followers (Hamstra, Sassenberg, Van Yperen, & Wisse 2014; Kark & Van Dijk 2007). Transactional leadership, on the other hand, emphasizes expected actions or roles and fits with the motivation to ensure useful ideas of prevention followers.[6]

Next to leadership, regulatory fit can operate in other aspects of the social environment. Predictors of fit would depend on the match between the employee's and the regulatory focus of other individuals in their workplace (Cesario & Higgins, 2008). Such an interpersonal fit could be due to colleagues and the leader´s focus (Shin, Kim, Choi & Hoon Lee, 2016). Moreover, research suggests it can be achieved from orientations of collectives such as teams or the organization (Petrou, Demerouti & Häfner, 2015; Sacramento et al., 2013). Here members homogenously share a

[6] It should be noted that Kark, van Dijk & Vashdi (2018), in their post-hoc analysis, did not find such a differential moderation effect of the two leadership styles for both foci on creativity. The interactive effect between a follower´s chronic regulatory focus and leadership was insignificant. Furthermore, the authors showed that transactional leadership primed a *situational* prevention focus, which in turn was negatively related to creativity. However, from their study, it is not possible to infer whether this negative effect is because of a mismatch between chronic or situational focus or in general because of a general limiting effect of transactional leadership. While transactional leadership had a negative effect on creativity via situational prevention focus, it did not change the effect of chronic prevention focus which remained insignificant. In addition, the limiting effect may have just been on the novelty side of creativity, as creativity was assessed with scales that emphasized originality and not usefulness.

“reality concerning strategic orientation towards risks with problem solving skills converging as a result of priming” (Kark & van Dijk, 2007). The team, for example, would provide regulatory fit via a common goal pursuit strategy (Higgins et al., 2003; Alexander & van Knippenberg, 2014), information processing within the team (Zhao & Penchman, 2007) and via non-verbal behavior or emotions (Cesario & Higgins, 2007). Similar mechanisms can also transfer to the interaction at higher levels, such as a shared organization climate relating to promotion or prevention goal pursuit strategies Roczniewska, Retowski & Higgins (2018).

In summary, when people work in organizational settings which align to their self-regulation strategies or work with others with a similar focus, then their ability to propose creative solutions likely strengthens. Next to improved cognitive abilities, current work behavior is perceived as more enjoyable (Freitas & Higgins, 2002). This feeling could signal to some that the initial creative strategy is correct (Schwartz, 1993). Regardless of the actual value of the solution, the individual engages in more creative behavior as fit increases the motivation to pursue and complete goals (Higgins et al., 2003; Latimer, Williams-Piehota, et al., 2008; Spiegel, Grant-Pillow & Higgins, 2004). Regulatory fit, therefore, adds to the primary creativity trade-off, as a recent study by Ahmadi et al. (2017) in the related organizational learning literature suggests. The authors showed that an organizational context with a prevention focus increased exploitation for managers with the same focus. Nevertheless, for managers with a promotion focus, an organizational context with a similar focus and complex increased their exploration. I therefore suggest that regulatory fit as the congruence between a person’s focus and contextual factors would increase the employee’s ability to generate ideas in line with her focus. As illustrated in figure 3, the tendency

toward novelty or usefulness does not change, but under fit overall idea generation increases. The vectors become longer but point into the same direction.

On the flip side, a non-matching work setting likely has a null effect or weakens the person´s ability to become creative (Wallace et al., 2016; Kark, van Dijk & Vashdi, 2018; Chi & Grandey, 2019). Some research suggests a misfit would not change the degree to which solutions are novel or useful. For example, a study investigating the effect of CEOs' regulatory focus on firm innovative behavior showed that while regulatory fit increased firm exploration and exploitation, misfit had no effect on the relationship between regulatory focus and exploration or exploitation (Kammerlander, Burger, Fust & Fueglistaller, 2015). Adapted to workplace creativity, persons who pursue their creative goals in an organizational context that is at odds with their motivational orientation — the context emphasizes safety and behaviors to ensure against losses for promotion-oriented employees or emphasizes growth and behaviors to ensure gains for prevention-oriented individuals— would experience misfit and 'feel wrong' about their current behavior (Friedman & Higgins, 2017). The feeling of 'wrong' would transfer to initial attitudes toward idea generation strategies and employees would de-intensify their engagement in creative behavior. As a result, they may be less able to become creative, but are unlikely to change their preference and behavior for the creativity facets. For example, a prevention-focused individual working with a transformational leader or in a workplace emphasizing promotion-focused goals would experience misfit. The individual would decrease creative behavior and thus may generate less useful solutions. Nonetheless, non-fit would also create a 'feeling of wrong' which would transfer to a situation causing the non-fit. Thus, although a promotion work context would emphasize idea generation behaviors that foster novelty, feelings associated with nonfit would signal to the

prevention-focused employee that such behavior should be avoided. In summary, while contextual factors that misfit to an employee's goal orientation strategy may decrease overall creativity, such factors would not change the degree to which creativity is novel or useful.

Proposition 4a: *Contextual factors that increase regulatory fit for a person with a promotion or prevention focus (e.g., alignment to eager or vigilant work behavior, congruent interpersonal fit) will increase a person´s ability to become creative, but not change the degree to which creativity is novel or useful.*

Insert Figure 3 about here

For individuals with a mixed focus, contextual factors that match either promotion or prevention would not boost idea generation. Depending on whether the contextual factors fit to eager or vigilant strategies, the balance between novelty and usefulness likely changes. Contextual factors that match either an employee's promotion or prevention system would create regulatory fit for one goal orientation strategy. The person would just achieve the feeling of right for behaviors associated with one dimension of his regulatory focus. The feeling of right informs the person the behavior or risk preference for one creativity facet is best and information processing associated with the matching focus would increase (Lee & Aaker 2004; Schwarz & Clore 1996). The person would experience fit and misfit at the same time. The feeling of misfit would transfer to the idea generation behavior not emphasized by the context. To illustrate, vigilant behavior of an employee´s prevention system would not fit with a leader, team or organizational culture showing the eager risky behavior of a promotion focus. The context would emphasize messages and information in line

with a high-risk preference (Camacho, Higgins & Luger; 2003). Systematic and persistent idea generation would feel wrong, while eager and flexible idea generation would feel right. The employee likely adapts to expected behaviors to maximize gains and proposes rather novel solutions. Someone with a mixed focus will therefore readjust creativity facets to match a promotion or prevention orientation. The person will not create more ideas but will create different types of ideas. As illustrated in figure 3, the vector turns toward either novelty or usefulness, depending on fit.

Proposition 4b: *Contextual factors that increase regulatory fit for either the promotion or prevention systems for a person with a simultaneous focus (e.g., alignment to eager or vigilant work behavior, interpersonal fit) will change the degree of novel or useful creativity.*

Predictors of regulatory fit with a simultaneous focus. To date, research on dual regulatory fit to promotion and prevention is largely missing. However, some preliminary evidence suggests that such fit would require contextual factors that enable employees to balance simultaneous pursuit of eager and vigilant strategies. In line with the literature on organizational ambidexterity, the context would enable an employee's autonomy to achieve ambitious goals while ensuring discipline to meet standards (Parker, 2014; Smith & Tushman, 2005). In such an environment, employees would be trusted and supported to behave freely, in line with their dual focus (Bledow et al., 2009; Gibson & Birkinshaw, 2004). Self-regulation would be at the discretion of the employee who can balance both idea generation strategies for novel and useful solutions.

The social environment can also fit to a simultaneous focus. Leaders would incorporate different styles that match a prevention or promotion system. They would show opposing, yet interrelated, behaviors that enable employees to handle

competing demands for creativity and to integrate differing idea generation strategies (Shao, Nijstad & Täuber, in press). Ambidextrous leaders could fit into a dual focus, as they flexibly shift between prioritizing exploration or exploitation goals (Alexander & van Knippenberg, 2014; Rosing, Frese, & Bausch, 2011). Expressing such conflicting demands likely boosts the overall work performance and creativity of the follower (Hunter, Cushenbery & Jayne, 2017). Building on Tabeau, Gemser, Hultink & Wijnberg´s (2017) study with designers, such leaders ensure employees can use flexible idea generation, but only up to a certain point, so that ideas are useful for the market. Individuals can moreover experience simultaneous fit to both systems of others, which in turn improves work performance. Johnson et al., (2017) offer preliminary insight that regulatory fit can interact between simultaneous high promotion and prevention focus of leaders and followers. They show that in dyads with simultaneous regulatory fit, employees perceived leaders as more effective and increased commitment.

Finally, collectives such as teams and organizations can showcase both goal orientations. Teams can diverge to separate collective regulatory foci, where members perceive the team comprised of different groups, each with collective motivational orientations (Waller, Okhuysen & Saghafian, 2016). Each subgroup creates its own shared perception of how its members should behave and self-regulate to collective goals (Kuenzi & Schminke, 2009). The benefits of such diversity in goal orientation would be likely for complex creativity as the team differs on ‘deep-level’ dimensions (Bantel & Jackson, 1989; Harrison, Price, & Bell, 1998). This diversity in goal orientation can increase information-processing and improve decision making. Learning and knowledge sharing likely dominate (Ely & Thomas, 2001; van Knippenberg, van Ginkel & Homan, 2013), and the employee can use both

strategic means for creativity. Such an unusual but diversified experience of fit and non-fit would benefit cognitive flexibility and brainstorming (Levine et al., 2016; Ritter et al., 2012). Diverse cognitive experience further increases a person's ability to make novel connections between unrelated objects and to break old cognitive patterns. To consider those requirements a person draws on past episodes of a similar situation. Relying on specific episodes increases persistence and flexibility (Madore, Addis & Schachter, 2015) and thus likely boosts both creativity facets. To conclude, for a simultaneous focus, the context would need to match both self-regulation strategies, such as providing factors that enable decision-authority or by displaying promotion and prevention orientations in the social environment. By experiencing fit for both foci, the employee will be more likely to balance novelty and usefulness.

Proposition 4c: *Contextual factors that match both promotion and prevention systems of a person with a simultaneous focus (e.g., enabling both eager and vigilant work behaviors, interpersonal fit to collectives with diverging foci) will increase novel and useful creativity.*

DISCUSSION

The aim of my theorizing is to account for variations of workplace creativity and to describe the underlying mechanisms leading to distinct creative outcomes. I used regulatory focus theory to propose the reasons why variations of novelty and usefulness may result from a person's goal orientation. The paper further disentangled the emotional-cognitive processes that result from individual differences in regulatory focus. I proposed that because those processes (summarized as paths) facilitate distinct idea generation strategies, they can explain how individuals generate ideas differing in their creativity facets. In addition, the proposed model

outlines paths that can co-occur and lead to novel and useful ideas when individuals have a simultaneous regulatory focus. Finally, the framework accounted for interacting factors at the contextual level that inhibit or strengthen the creativity output. By applying regulatory focus theory to the context, I have defined criteria for factors of the workplace that should distinctly impact the paths to, and the facets of, creativity for different foci. In the remainder of this article I discuss the contributions and implications of the model and highlight future research ideas.

Implications for research on individual workplace creativity

Research on workplace creativity continues to incorporate more complex views of human behavior (Zhou et al., 2014). Although rich with insights on the three elements of creativity - the outputs as novelty and usefulness, the underlying processes and the interactions - research and conceptual work that bridges across the three is largely missing. As such, few if any studies considered whether and how the processes underlying idea generation matter for facets of creativity and the role the context plays in interacting with such idea generation. By emphasizing the role of individual differences in regulatory focus, my theorizing suggests we can build a holistic view of workplace creativity that bridges between those islands of insights. Conceptualizing such different foci and the resulting mechanisms not only organizes the emotional and cognitive processes many scholars have considered, but also provides a tool to predict types of idea generation. The model provides the conceptual basis for articulating distinct processes underlying novelty and usefulness and thus can explain the trade-off between the dimensions of creativity highlighted in recent studies (Berg, 2014; Miron-Spektor & Beenen, 2015; Zhou et al., 2017). In addition, my model offered regulatory fit theory as a lens to explain the effect of interacting factors. By distinguishing for both foci, how and when the social context

impacts the creative process, my model made evident the need for a more complete consideration of the interaction as the combination between individual and contextual factors. As such, my model not only provided a holistic view of the idea generation process underlying facets of creativity, but also provided a more comprehensive framework to understand interacting mechanisms. Several exciting research opportunities follow from a more comprehensive view of the underlying mechanisms of workplace creativity as novelty and usefulness.

Refined view on emotional-cognitive processes. I have attempted to better capture the role emotions play in the creative process. The model distinguishes the arousal and valence components and provides a conceptual basis to how emotions facilitate different facets of creativity. With such a refined view, scholars can revisit inconsistencies about the role of positive and negative emotions. To disentangle their effect, future studies would differentiate between cognitive processes, boundary conditions and the creative output. Testing such moderated and mediated links will provide a more integrated view on how and when distinct emotions relate to types of workplace creativity. Because the paper focused on integrating the emotional-cognitive processes established in psychological models of creativity, it does not fully capture other emotional responses. For example, emotions with low arousal may facilitate creativity. Both contentment and relaxation increase cognitive breath but their effect on idea generation is unclear (Harmon-Jones, Gable, & Price, 2013; Fredrickson & Branigan, 2005). Research could also extend beyond the emotional circumplex model and study the effect of specific emotions, such as shame or anger (Baas, de Dreu & Nijstad, 2011). My work suggests such emotions will have distinct effects on the two creativity components and likely depend on conditional effects.

The model did not discuss such conditional effects or factors that may impact or change the emotional-cognitive processes in idea generation. Although research has investigated the effect of emotional experiences on creativity, to date, scholarly attention has largely overlooked the role individuals play in shaping their emotions. Nonetheless, employees can likely influence the paths to creativity by changing the impact of their emotional experience. The ability to influence emotional experience may be especially valuable for 'negative' emotions that are associated with lower creativity (Zhou & Hoever, 2014). For instance, González-Gómez & Richter's (2015) field study found mixed results for the effect of employee shame on creativity but the study showed that shame facilitated creativity when employees engaged in emotional regulation and worked in teams which encourage creativity. Moreover, in Yip & Schweitzer's (2019) experimental study, anger reduced perspective taking of individuals. Yet, once individuals became aware of their emotion, the negative effect on perspective taking disappeared. Both studies therefore suggest that emotional regulation plays a vital role in the creative process. Individuals engage in it to manage "which emotions they have, when they have them, and how they experience and express these emotions" (Gross, 1998:275). One emotional regulation strategy is reappraisal, which should be especially relevant for idea generation. It describes a strategy or behavior where a person elaborates on the information of the emotion before engaging in later cognitive processes (Gross, 2002). A person uses it as a knowledge-based and goal-oriented strategy to re-evaluate the emotional stimuli in a more neutral way. Feelings become more balanced as affective responses are less intensive (Steinberger, Payne & Kensigner, 2011) and potential negative effects on cognition decrease (Lerner et al., 2015). Reappraisal improves thinking and goal directed behaviors by recruiting similar neurologic areas associated with complex

conscious top-down responses (Otto, Misra, Prasad & McRae, 2014). In short, reappraisal relies on similar areas of the brain individuals use to evaluate goals, plan long term actions and make sense of the world. Thus, future studies could examine how reappraisal impacts the creativity process and explore if effects differ for the self-regulation processes described in this paper. Such work could also inform new conceptual work that answers calls to recognize emotional capabilities as antecedents to creativity (Hennessey & Amabile, 2010).

Studies could also recognize different journeys in emotional regulation. Individuals not only use distinct abilities to regulate their emotions, but the unique arousal-valence experience also influences the speed and destination of the desired emotion (Scott, Awasty, Johnson, Matta & Hollenbeck, in press). Regulatory focus theory could be a valuable starting point, because it recognizes distinct arousal valence dimensions resulting from goal failure or achievement. Scholars could hence describe the likely emotional regulation journey and disentangle the relative importance of arousal or valance change on creativity. Next to emotional regulation, studies could identify other factors affecting self-regulation. They may include individual self-control from indulging in temptations (Fujita, 2011) or situational factors such as competence, previous knowledge and required autonomy (Milyavskaya et al., 2015).

Dynamics in the creative process. Although the model captures several emotional-cognitive processes and their interplay, it nonetheless does not fully capture dynamics of workplace creativity. First, individuals likely can switch between the paths and adapt them to the requirements at work (Amabile & Pratt, 2016). I argue individuals with a simultaneous focus engage in flexible and persistence idea generation, with resulting ambivalence enabling both creativity facets (Reich &

Wheeler, 2016). Investigating how employees balance the paths is important as the processes may blend or influence each other. Potential research topics might explore how changing flexibility and persistence affects the facets of creativity. For example, studies can build on experimental findings that show switching between tasks can improve creative performance (Lu, Akinola & Mason, 2017; Kohn & Smith, 2009). Success in initial idea generation may thus influence later idea generation. Models could study such dependencies by using models of how feedback loops in organizational behavior lead to upward or downward spirals for work outcomes (Mayo, Kakarika, Mainemelis & Deuschel, 2017). Whether and when individuals use one pure path, simultaneous paths or switch remains open for discussion - but most certainly, they do not only engage in one path.

Second, engaging or switching between idea generation strategies in a positive feedback loop may depend on an employee's ability to pursue multiple goals. Although speculative, research could build on recent multiple-goal pursuit models (Ballard, Yeo, Loft, Vancouver & Neal, 2016) to recognize how preferences for goals develop over time. Individuals would consider the consequences of flexible or persistent idea generation separately. Over time, the preference for each path would change as the person evaluates the effectiveness in moving toward creative goals. Conditional effects such as time pressure, expected reward and progress would influence how many resources an employee spends for novelty or usefulness. Therefore, while a person may initially focus with a specific strategy on one side of creativity, over time as new information is being assessed, the person may change toward another side of creativity (Ballard, Vancouver & Neal, 2018).

Third, this article has remained in the idea generation phase. Future conceptual and empirical work may investigate later stages in the creative journey. Such work

could build on Perry-Smith & Manucci's (2017) excellent theorizing on how the social context influences when individuals emphasize novelty or usefulness across the four creativity phases of generation, elaboration, championing and implementation. For example, following initial generation of ideas, the actor selects and elaborates on one promising idea. Scholars could investigate if the emotional-cognitive processes also translate to later stages in the creative journey. For example, the elaboration stage mirrors persistent idea generation as the actor systematically clarifies, develops and tests the idea before sharing it within a wider context (Mainemelis, 2010). However, as creativity now 'takes place outside the mind' the individual elaborates on the novelty or usefulness aspects in line with perceivers evaluating their idea. Hence, scholars could refocus on creativity as a social construction process (Ford, 1996). Although novelty and usefulness are independent, the former often takes the center-stage in assessing creativity and colors the perception of the latter. Employees therefore can use influence tactics to emphasize novelty aspects in the hope of receiving more favorable creativity ratings (Lu, Bartol, Venkataramani, Zheng & Liu, 2018). Moreover, individuals have different abilities to recognize novelty and are influenced by their social context (Zhou et al., 2017). It may be helpful to incorporate Zhou et al.'s (2017) method to differentiate between normative (objective) creativity and perceived creativity dimensions by various actors. Scholars can then highlight which individual (e.g. persuasion tactic) and contextual factors (e.g. team cohesion) interrelate and influence differences in perceived versus actual creativity. Overall, considering interactional models in the entire creativity journey would help scholars to understand when and which creative ideas make it from the mind of the individual to the implementation as innovation in the firm.

Finally, scholars could turn their attention to a more complex (and realistic) view on how novelty and usefulness unfold over time. The creative process inherently includes the development, evolution and emergence of individual and contextual factors. While recognizing linear phases from idea generation to innovation implementation can be a valuable starting point, future conceptual work could recognize the dynamic and non-linear interplay between the phases (Bledow et al., 2009). Longitudinal studies in the field with several data points of creative performance over time would become the norm instead of short-term laboratory studies with one snapshot of the creative output.

Implications for research on the interface between the individual and the context

Although the influence of the context is central in the current debate around workplace creativity, most research on its effect is descriptive (with some notable exceptions, e.g. Hoever & Zhou, 2014). In addition, the context itself is often conceptualized as a static and single factor that influences people uniformly. The proposed framework used regulatory fit theory to offer a lens on the interface of the interactions. I explained how the context influences people distinctly by highlighting exemplary factors which enable employees to use their primary self-regulation. Using regulatory fit theory, future research could investigate the strength of an interaction between the individual and various contexts. Indeed, several lines of research show how individuals can achieve regulatory fit with factors across various levels, such as emotions, team structure, culture and organizational feedback systems (Johnson et al., 2015; Wallace, Butts, Johnson, Stevens & Smith, 2016). Experimental studies could first establish the effect of fit or misfit on creativity, using different configurations of individual and leader, team or organizational characteristics. Through further field

research, scholars could then investigate when different degrees of fit affect novelty and usefulness.

Dynamics of interactions. Next to recognizing dynamics in the creative processes and their output, studies can consider when the individual and social context co-evolve. For example, for a team, the creative journey is not static, but teams likely switch between stages (Alexander & van Knippenberg, 2014). Scholars could investigate the social processes of individuals at higher levels of analysis. In line with how group ideas emerge from associate memories (Nijstad & Stroebe, 2006), the creative behavior of others would influence an employee´s creative behavior. Future research thus may uncover how teams decide to emphasize aspects of creativity, adapt stages in the creative journey and how this relates to each member's preference.

Furthermore, models can move toward investigating the dynamics at higher levels of analysis. The organizational context would not only be stable with an enduring influence, but also as changing with a discrete time-bound influence. For instance, Perry-Smith & Mannucci (2017) propose that network elements that boost creativity in early phases may later have limiting effects, depending on how successful individuals championed their creative ideas to perceivers. Thus, factors that promote employee creativity at one point in time may limit it at another (Thayer, Alexandra Petruzzelli, & Caitlin E. McClurg, 2018). Event system theory (Morgeson et al., 2015) may be useful to account for changes in the interaction. It conceptualizes the context as an event system that consists of the interaction between its strength, space (location, spread), and time (Johns, 2018). Interactional creativity models therefore would not only include the relative fit between actor and context but recognize a dynamic or plastic fit.

Divergence of collective states. This paper touched on the regulatory focus of collectives to highlight when a congruent social environment interacts with a person´s creativity. Most evidence for collective regulatory focus (CRF) is at the team level. Several authors propose that teams converge on decision making and goal orientation which leads to a dominant regulatory focus of the collective, resulting in a shared reality with clear guiding principles for complex problems (Beersma, Homan, Van Kleef & De Dreu, 2013; Levine, Higgins & Choi, 2000; Rietzschel, 2011). As a result, risk bias and work behaviors align, because team members self-regulate their goals in line with the dominant regulatory focus (Dimotakis et al., 2012, Luria, 2008). To date, though the antecedents of emerging collective regulatory focus (CRF) are unclear, partly because CRF was either induced as a collective state or averaged referent shifts across people (Johnson et al., 2015). Studies therefore constructed a homogenous perception of the collective´s focus but remained silent on how and why it emerges. To explain the processes and effects of CRF, scholars could use recent high-quality theorizing on how a shared culture emerges and influences work behaviors (Cardon Post & Förster, 2017; Parke & Seo, 2017). In addition, future research may benefit from including contexts with diverging goal orientations (van Knippenberg & Mell, 2016). Such research could move beyond seeing team divergence as variety toward acknowledging its pattern of form and shape (Loignon, Woehr, Loughry & Ohland, 2019). For example, studies could cluster teams based on the distribution of promotion and prevention focus and identify minority belief (skewed), bimodal, fragmented, or triangular forms. Each pattern of the collective may distinctly influence team processes and individual members. From a practical standpoint, it is worth exploring the conditions under which individuals can benefit from such heterogenous contexts. The team could benefit from leadership that

develops the team's capacity to integrate each individual member's views, contribution and information (van Knippenberg, 2017). Finally, employees could learn how they perceive and use differences to perform in the workplace (Tasheva & Hillman, 2018).

CONCLUSION

The study of workplace creativity is complex. A diverse set of interacting factors and processes impact individual creativity. The proposed model offers a lens to organize and integrate this diversity by distinguishing both the processes and the dimensions of creativity. In exploring how individuals generate ideas in the workplace, I used a self-regulation perspective and theorized that creativity varies in its novelty and usefulness because of individual differences in regulatory focus. My model further highlighted how regulatory focus facilitates distinct emotional self-regulation processes which were summarized as paths to creativity. More broadly, my theorizing proposes that the effect on workplace creativity of interacting contextual factors depends on their interface with the individual´s goal pursuit strategy. I have attempted to shed light on this interplay by using regulatory fit theory as a lens on the underlying mechanisms. The model articulates how and when contextual factors interact with a person's idea generation process and resulting creativity facets. More broadly, my theorizing of unique factors, processes and interactions shaping facets of workplace creativity offers a platform for future research that solves some of the contradictions in the literature.

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TABLES AND FIGURES

FIGURE 1

Linking facets of workplace creativity via self-regulation to an employee's regulatory focus and fit

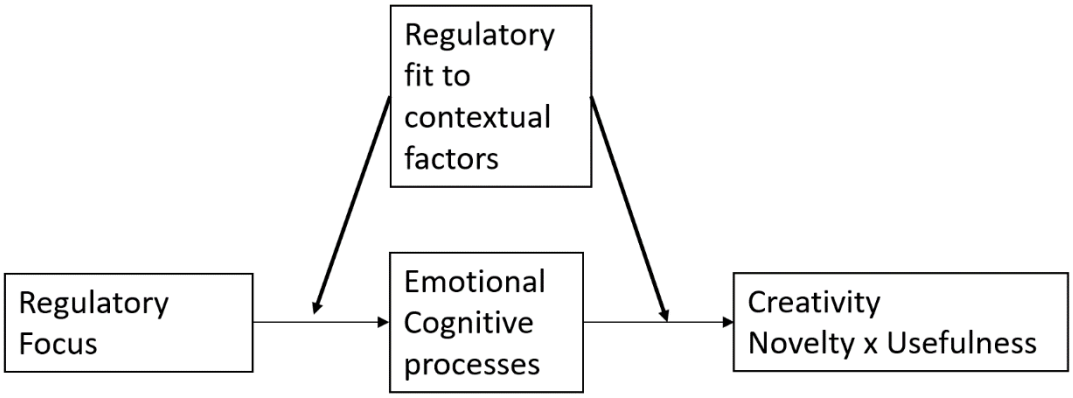


FIGURE 2

How individuals' dominant regulatory focus facilitates degrees of novelty and usefulness via distinct emotional-cognitive paths

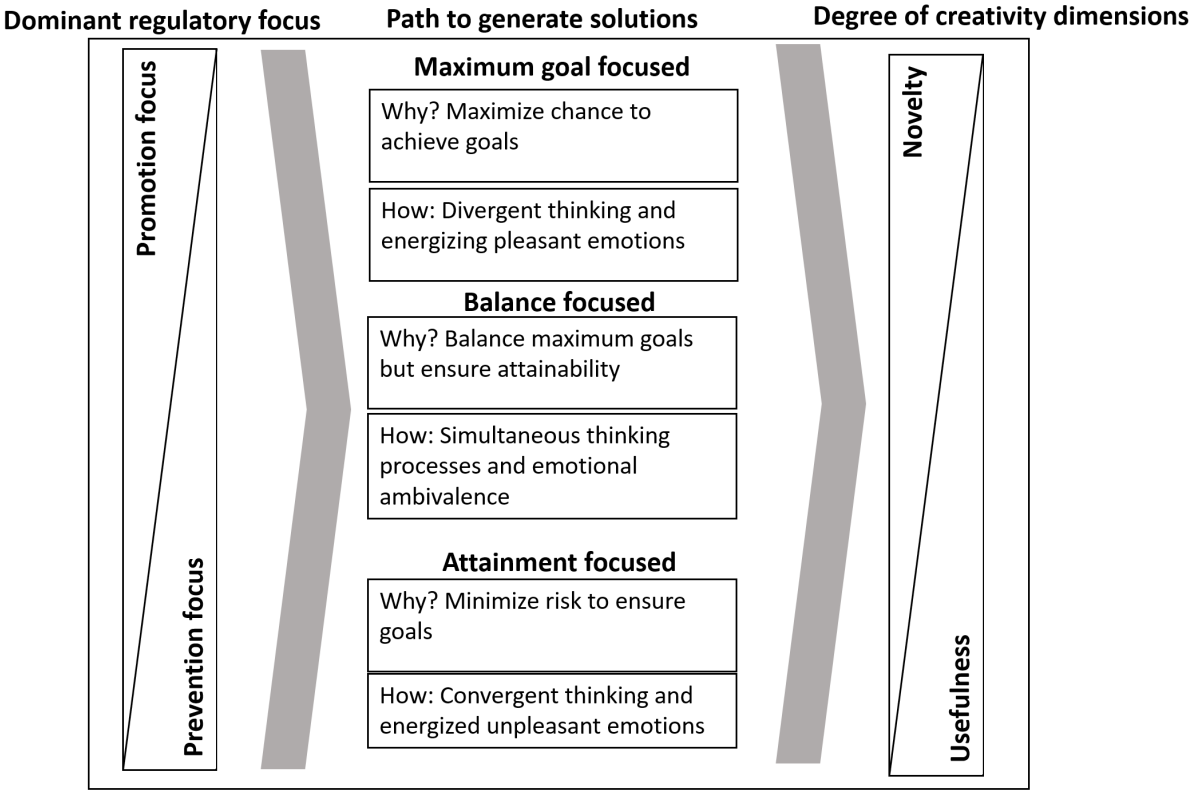
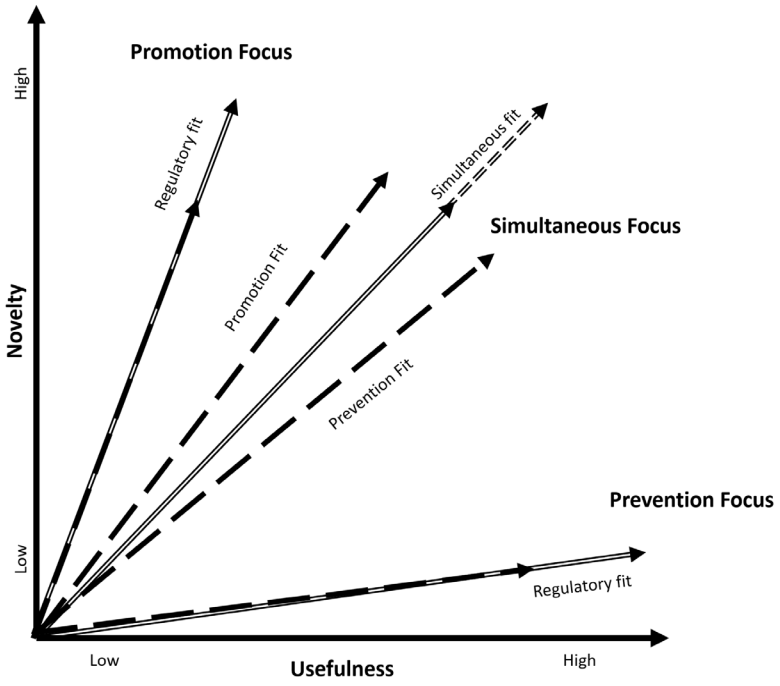


FIGURE 3

When regulatory fit boosts creativity facets by matching an employee´s dominant regulatory focus



CHAPTER II - BALANCING CREATIVITY FACETS: REGULATORY FOCUS AND THE ROLE OF INDIVIDUAL COGNITIVE PROCESSES ON NOVELTY AND USEFULNESS

ABSTRACT

Across two studies, we examined how individual differences in regulatory focus (promotion and prevention focus and their combination) influence individuals to generate creative solutions that vary in their degree of novelty and usefulness. Study 1 (a field study with 125 students working in 35 teams) showed that regulatory focus at the team level, but not at the individual level, influenced individual creative behavior. Study 2, an experimental design using a product development task (n = 227), disentangled the effect of individual regulatory focus on the cognitive processes and creativity facets. Individuals with a high promotion focus produced creative prototypes that were more novel. Flexibility was a partial mediator of this relationship with a positive effect on novelty, while fluency had a negative mediating effect. Although prevention focus did not have an effect on either novelty or usefulness, it had a conditional effect on the relationship between promotion focus and novelty. The positive effect of promotion focus became insignificant for both low and high levels of prevention focus. Overall, our findings suggest that the impact of promotion focus on creativity is mainly on the novelty side of creativity, while prevention focus in itself has no relationship with either creativity facet. We discuss implications of the findings for future research on creativity in workplace settings.

CHAPTER II - BALANCING CREATIVITY FACETS: REGULATORY FOCUS AND THE ROLE OF INDIVIDUAL COGNITIVE PROCESSES ON NOVELTY AND USEFULNESS

Both academics and business leaders place workplace creativity among the most important resources for companies to stay competitive in ever-changing times (McKinsey & Company, 2017; World Economic Forum, 2018; Zhou & Hoever, 2014). Over the past three decades, there has been a surge in scientific research on understanding what enables employees to develop creative ideas (Liu, Jiang, Shalley, Keem & Zhoug, 2016). Scholars increasingly recognize that while a variety of conditions can allow idea generation in the workplace, they can also affect distinct facets of the creative output (for a review, see Zhou & Hoever, 2014). A widely shared definition of workplace creativity is that it consists of both novel and useful solutions to a situation (Amabile, 1982). Novelty refers to the degree an idea, product or service is new, original, unique and innovative (Montag, Maertz & Baer, 2012; Sullivan & Ford, 2010), and usefulness describes the degree an idea, product or service is practical, appropriate, valuable and effective. Recent scholarship has shown that the conditions and factors that have been linked to creativity in the past, in fact, often have a unique and at times opposite effect on the dimensions of novelty and usefulness (Berg, 2014; Grant & Berry, 2011; Miron-Spektor & Beenen, 2015). For instance, individuals who create novel or original solutions when they rely on new thought content (Berg, 2014) are motivated by learning goals and use flexible thinking (Miron-Spektor & Beenen, 2015). On the other hand, individuals who generate useful solutions when they rely on familiar thought content (Berg, 2014) are motivated by performance goals and decide quickly on a single solution (Miron-Spektor & Beenen, 2015).

However, our understanding of how individuals create solutions with different degrees of novelty and usefulness remains limited for three key reasons. First, we know little about the role that individual differences play for the two creativity dimensions (Zhou, Wang, Song & Wu, 2017). In turn, we cannot predict what motivates employees to favor one facet of workplace creativity over the other (Liu et al., 2016). It is therefore difficult for researchers and practitioners to determine the requirements for employees to develop ideas at work that are both useful *and* novel (Berg, 2014). Second, the mechanisms yielding such facets of ideas remain unknown. Although scholars distinguish between distinct cognitive processes, often referred to as *paths* through which a person can create ideas, they often do not separate the two creativity facets as they measure novelty and usefulness together with one general measure of creativity (Baas, De Dreu & Nijstad, 2008; Montag, Maertz & Baer, 2012). Researchers thus face difficulties to disentangle the impact of the factors and processes that predict the different facets of creativity (Amabile, 1982; George & Zhou, 2007). As a result, whether the unique paths to creativity, such as flexible or persistent thinking, facilitate different degrees to which ideas are novel or useful remains unknown (Amabile, Barsade, Mueller, & Staw, 2005; Bechtold, de Dreu, Nijstad & Choi, 2010). Third, it is unclear whether the conditions that facilitate the paths to creativity can occur together and influence one another. Because employees must balance conflicting conditions, ideas are rarely highly novel and useful but often show a trade-off (Berg, 2014; Mueller, Melwani & Goncalo, 2012). Recognizing what is needed for co-occurring conditions is important, as it could highlight when this trade-off can be helpful or harmful (Lu, Akinola & Mason, 2017; Miron-Spektor & Beenen, 2015).

In this study, we address the above challenges by exploring the role individual differences play in facilitating novelty and usefulness and by investigating how distinct cognitive processes yield both creativity facets. We build on regulatory focus theory (Higgins, 1997) to investigate why and how one's focus motivates the two facets. Regulatory focus theory distinguishes between two motivational systems that affect people's orientations toward desired end states and their strategic preferences in goal pursuit (Higgins, Shah & Friedman, 1997). Promotion-focused individuals are concerned with advancing their growth and nurturance needs and are striving to achieve ideals and accomplishments. Prevention-focused individuals, in contrast, are concerned with the fulfillment and maintenance of security needs and aim to fulfill oughts and duties. While abundant research shows how an employee's regulatory focus affects workplace outcomes (for a review, see Johnson, Smith, Wallace, Hill & Baron, 2015), its role on workplace creativity is less clear (Baas et al., 2008; Zhou & Hoever, 2014). Evidence suggests a positive relationship between promotion focus and (overall) creativity; however, the findings pertaining to prevention focus are inconsistent (Baas et al. 2008; Lanaj, Chang, & Johnson, 2012). For instance, while some empirical studies found a positive relationship between prevention focus or avoidance motivation and performance on creativity tasks (Baas, De Dreu, & Nijstad, 2011; Roskes, De Dreu, & Nijstad, 2012), the meta-analysis by Lanaj and colleagues (2012) did not yield a significant effect on innovative or creative performance. In addition, Zhou & Hoever (2014), in their review on creativity, suggest that prevention focus as an individual difference may restrict creativity. Importantly, these studies did not include measures that distinguished between the novel and useful aspects of creativity. Although recent research has uncovered that regulatory focus impacts the degree individuals *perceive* novelty and usefulness of solutions (Zhou, Wang, Song

& Wu, 2017), to our knowledge, no study has investigated the role regulatory focus plays in the generation of the two facets of workplace creativity. Therefore, it remains unclear if and how an employee's regulatory focus has a unique impact on novelty and usefulness (Bittner, Bruena & Rietschel, 2016). We argue that individual differences in promotion and prevention focus will contribute to the degree a person generates novel or useful solutions.

In addition, we propose that regulatory focus may shed light on the cognitive processes that lead to the two creativity dimensions. To develop creative ideas, individuals can engage in seemingly opposite cognitive paths (Amabile, 1982; Baas et al., 2008; George & Zhou, 2002). Scholars often use the Dual Process Creativity Model (DPCM, De Dreu, Baas & Nijstad, 2008) to describe how individuals generate ideas through two distinct paths—flexible, divergent thinking and persistent, convergent thinking. Recent research suggests that while both paths can facilitate creativity, the degree to which the person engages in flexible or persistent thinking may affect the underlying dimensions of creativity (Amabile, Barsade, Mueller, & Staw, 2005; Bechtoldt, Choi & Nijstad, 2012). Nonetheless, findings pertaining to their influence on workplace creativity remain inconsistent and, we argue, may stem from the fact that we know little about how various cognitive paths may uniquely relate to the two underlying creativity dimensions (Anderson, Potočnik & Zhou, 2014; Baas et al., 2008). Further, we do not yet know how regulatory focus may influence these paths. Although previous research has linked regulatory focus to constructs related to the creative process, such as exploration and exploitation behavior (Ahmadi, Khanagha, Berchicci & Jansen, 2017; Kammerlander, Burger, Fust, & Fueglistaller, 2015) or cognitive processes (Baas, De Dreu & Nijstad, 2011), we remain in the dark about how regulatory focus may influence the creative process

paths to novel and/or useful creative output. Studies have shown that promotion-focused individuals demonstrate more explorative behavior and flexible thinking and prevention-focused people demonstrate more exploitative processes and persistent thinking. However, it remains unclear if and how these processes translate into distinct creativity facets.

Finally, we investigate how the regulatory focus orientations of promotion and prevention together may influence the degree to which creativity outputs are more novel and/or useful. Though the orientations toward goal pursuit appear orthogonal, both foci can occur in tandem. They are independent motivational orientation strategies rather than bipolar constructs (Förster, Higgins & Bianco, 2003; Lanaj et al., 2012; Scholer & Higgins, 2008). A person therefore can have high levels of both foci, just one focus or low levels of both foci. To our knowledge, no studies to date have tested the role both promotion and prevention focus play in the idea generation process and the effect of the two foci on workplace creativity. It is unclear, therefore, how the relationship between the two foci may enhance or limit the novel and useful facets of creativity.

We conducted two studies to systematically investigate the important phenomena. We began with a field study with students working in teams on an entrepreneurial project and being assessed by their peers on their creative behavior. We measured individual work regulatory focus and team regulatory focus (as the aggregate of the member's focus) and tested how the foci predict creative behavior associated with novelty and usefulness. We found that although individual regulatory focus had no significant effect on creative behavior, team regulatory focus related to novelty and usefulness. The pattern was in line with our predictions, as students who worked in teams scoring higher on promotion focus showed more novelty and

usefulness. For students working in teams with a high prevention focus, we found a positive trend toward usefulness. The contribution of Study 1 is that work regulatory focus is a key factor that influences novelty and usefulness behavior, but that should be clearly distinguished across different levels. Study 2 was experimental and investigated the underlying mechanisms by building on the DPCM to explain how regulatory focus predicts distinct facets of creativity. We used a prototype development task to test how the foci each relate to cognitive processes and subsequently to novelty and usefulness. Individuals with a high promotion focus were more likely to produce creative prototypes that were novel, and this relationship was mediated by cognitive flexibility. The study's contribution is that two cognitive processes of flexibility antagonistically mediate the effect onto novelty, such that flexible thinking has a positive effect and fluent thinking has a negative effect. Finally, we found prevention focus had a conditional effect on the effect of promotion focus. The positive effect of promotion focus became insignificant for low or high levels of prevention focus. Thus, although both systems overall do not interact and act independently in the creative process, extreme levels of prevention focus can hinder the positive effect of promotion focus.

Overall, through our integration of regulatory focus theory and workplace creativity, the current study makes several important contributions. We respond to recent calls to investigate how individual differences in motivation influence distinct aspects of creativity and to explore the mediating role of cognitive mechanisms (Liu et al., 2016; Parke, Seo & Sherf, 2015). This study is among the first to examine the way motivation accounts for different dimensions of workplace creativity and for the cognitive processes that accompany the paths to various creativity dimensions. This also allows us to provide a more granular view on how different cognitive processes

contribute to novelty and usefulness. By distinguishing aspects of cognitive flexibility and persistence and testing their relationship to each focus and creativity facet, we gain a deeper understanding of how novelty or usefulness emerge. Finally, our study adds to our understanding of the joint influence of the two regulatory foci on creativity. As we investigate the effect of promotion and prevention focus separately – and explore their conditional interactive effect on both novelty and usefulness – we add empirically to recent proposals for an interactive or compositional effect of both foci (Bilgili, Campbell, Leary-Kelly, Ellstrand & Johnson, in press). This approach also answers calls to examine finer grained interactive models of creativity that investigate how various factors enhance or limit workplace creativity (Zhou & Hoever, 2014).

THEORETICAL FRAMEWORK AND HYPOTHESES

Individual regulatory focus and novelty and usefulness

We argue that a person's regulatory focus predicts the way an individual expresses novelty and usefulness. As a key theory in the psychology literature, regulatory focus theory highlights two basic self-regulation systems (Higgins, 1997; Kark & Van Dijk, 2007). With a promotion focus, individuals strive to achieve desired end-states, while with a prevention focus, they focus on avoiding undesired end-states, dependent on their experience of pleasure or pain. Regulatory focus influences an individual's goal preference (Förster, Higgins & Idson, 1998), risk perception and perseverance (Higgins et al., 1997; Shah & Higgins, 1997) and decision-making and thinking (Crowe & Higgins, 1997) and therefore helps to explain why and how individuals generate solutions that differ in novelty or usefulness. We argue that depending on their regulatory focus, individuals will primarily use approach or avoidance behaviors as strategic means to self-regulate toward a desired form of

creativity. In addition, regulatory focus has been linked to various work-related outcomes as it facilitates distinct cognitive processes and behaviors in the pursuit of goals. Therefore, an individual's promotion and prevention focus will facilitate the way an individual expresses novelty and usefulness. As shown in Figure 1 below, it influences the preference for the two creativity dimensions and facilitates distinct cognitive processes preceding creativity.

Insert Figure 1 about here

***Promotion focus and novelty*.** Several streams of research find a positive relationship of promotion focus to creativity or related constructs (Lanaj et al., 2012; Zhou, Hirst & Shipton, 2012). For instance, a meta-analysis by Lanaj et al. (2012) showed that promotion focus had a positive significant relationship with innovative performance. Zhou et al. (2012) furthermore found a direct positive relationship between promotion focus and employee creativity. However, to date, the relationship between promotion focus and creative performance is mainly established with respect to creative insight tasks (Zhou & Hoever, 2014), while studies on workplace creativity (Dong, Bartol, Zhang, & Li, 2015; Neubert, Kacmar, Carlson, Chonk, & Roberts, 2008; Zhou et al., 2012) have not revealed its distinct contributions to the generation of novelty and usefulness. We suggest that promotion focus facilitates solutions that are novel (rather than useful). With a promotion focus, individuals strive to achieve gains and avoid misses for maximum rewards (Higgins, 1997; Shah & Higgins, 1997). A promotion-focused person perseveres eagerly to propose several solutions as this can translate into the highest reward (Crowe & Higgins, 1997). The person is intrinsically motivated to identify as many opportunities for success (Brockner, Higgins & Low, 2004; Herzenstein, Posavac & Brakus et al., 2007; Idson,

Libermann & Higgins, 2000; Tumasjan & Braun, 2012), which we suggest will benefit novelty. In turn, intrinsic motivation is a strong predictor for broad perspective taking (Grant & Berry, 2011) and overall creativity (Amabile, 1996). To create solutions, the person will assess several distant knowledge domains (Grant & Berry, 2011; Montag et al., 2012). The focus is on maximizing chances for success and thus the actor generates many unique ideas by switching often between different perspectives for a solution (Baas, Roskes, Sligte, Nijstad & De Dreu, 2013). For instance, founders or managers with a promotion focus are more likely to explore various alternatives and maximize growth opportunities (Ahmadi et al., 2017; Kammerlander et al., 2015). As solutions are global and span various knowledge domains under a promotion focus (Förster & Higgins, 2005; Randell, 2013; Roese, Pennington & Hur, 1999), employees form new connections among diverse knowledge categories for unique solutions (Friedman & Förster, 2010) which should benefit novelty.

While promotion focus would promote novelty, it may be at the expense of usefulness. In an effort to maximize gains, promotion-focused individuals have an increased risk bias and a higher tendency for mistakes (Friedman & Förster, 2001). Individuals would likely focus more on the novelty side to achieve wins from a highly original solution. Because promotion-focused individuals propose holistic solutions and address requirements across several remote domains, they may overlook usefulness facets of creativity that nonetheless require a narrow focus on a specific problem. In addition, decision making with a promotion focus is intuitive rather than systematic (Cornwell & Higgins, 2016), which should further limit an idea's usefulness. Nonetheless, previous research linked promotion focus to overall creativity, which, by definition, includes both novelty and usefulness facets. This suggests that promotion focus does not have a negative effect on usefulness, but in

line with the above, the relationship to creativity is mainly on the novelty facet. In summary, employees with a high promotion focus will concentrate more on gains than losses and will be more willing to embrace the risk of uncertain novel solutions than to avoid failure with useful solutions. Therefore:

Hypothesis 1a: *Promotion focus is positively related to a solution's novelty.*

Prevention focus and usefulness. The relationship between prevention focus and creativity is less clear (Lanaj et al., 2012). While a few studies show that prevention focus can positively influence overall creativity (Baas et al., 2011), other evidence suggests the effect differs for facets of creativity and the creative process (Sacrament, Fay & West, 2013). In addition, studies in the related organizational learning literature show that a prevention focus of employees had null or a negative relationship with exploring new ideas or recognizing opportunities (Ahmadi et al., 2017; Kammerlander et al., 2015; Tumasjan & Braun, 2012). In line with the below, we argue that those inconsistent effects on overall creativity may stem from the fact that prevention focus mainly facilitates the usefulness and not the novelty facet of creativity. As the novelty side of creativity often takes "center stage" in creativity assessment, studies that have used an overall measure of creativity may have overlooked its positive relationship with usefulness.

A strong risk bias and vigilant behavior in goal pursuit will cause a strong preference of employees for useful ideas to ensure safety, security and stability. A prevention-focused person disregards novelty in an effort to avoid negative outcomes from solutions that may fail (Higgins, 1997). There is no reason to maximize rewards with novel solutions, because value and expectancy are independent (Brockner et al., 2004; Idson et al., 2000; Shah & Higgins, 1997). In other words, counter to classic expectancy models (Vroom, 1964) where commitment to a goal increases the higher

its value and expectancy, such a relationship does not hold for prevention focus (Shah & Higgins, 1997). Under prevention focus the person will commit to solutions that are assured, regardless of value, or to solutions that are necessary for safety, regardless of expected outcomes. Therefore, a higher potential value from novel solutions is less important than committing to useful solutions that are more attainable or necessary. To avoid errors, the employee will reject original but risky solutions (Crowe & Higgins, 1997). Prevention-focused individuals ensure solutions are appropriate by engaging in subtractive and counterfactual thinking and by proposing ideas within similar knowledge domains for a specific problem (Sacramento et al., 2013; Friedman & Förster, 2001). The person's motivation to reduce uncertainty with local and concrete solutions should thus limit novelty or originality of ideas (Friedman & Förster, 2005; Higgins & Förster, 2005; Miron-Spektor & Beenen, 2015; Roskes, 2013; Steffens, Gocłowska, Cruwys & Galinsky, 2016). Several reviews and meta-analyses support this reasoning as they show an inconsistent effect of prevention focus and related concepts on workplace creativity (Anderson et al., 2014; Baas et al., 2008). After all, by definition, novelty is essential for workplace creativity. Therefore, research that shows a positive relationship of prevention focus to overall creativity (Baas et al., 2011; Roskes, De Dreu & Nijstad, 2012) should be interpreted with caution. For example, Baas et al. (2011) used performance on idea generation tasks, which assesses cognitive processes, as a proxy for overall creativity. The measures thus confounded both creativity dimensions and measured cognitive processes instead of the creativity output.

Useful solutions, however, are likely as a prevention-focused person could meet expected goals with them and avoid potential punishment. In addition, prevention-focused individuals base their judgement on reason instead of feelings (Cornwell &

Higgins, 2016, which should translate into useful and appropriate solutions. The prevention-focused person searches for new ideas incrementally for a task at hand (Newell & Simon, 1972) and focuses on ‘known ideas’ (Herzenstein et al., 2007). The individual looks for familiar ideas to keep the status quo and to ensure ideas fulfill expected requirements (Herzenstein et al., 2007; Liberman et al., 1999). Prevention-focused individuals prefer to reject a novel solution with a greater reward potential rather than risk disaster if the solution fails. In conclusion, with a prevention focus, the person would focus on ensuring usefulness of a solution to meet expected requirements but would disregard novelty to avoid potential failure. Therefore, we hypothesize:

Hypothesis 1b: *Prevention focus is positively related to solution´s usefulness.*

Simultaneous regulatory focus novel and useful creativity. Several scholars argue that promotion and prevention focus and associated behaviors are independent motivational orientation strategies rather than bipolar constructs (Förster et al., 2003; Scholer & Higgins, 2008). For example, Lanaj et al. (2012) showed in their meta-analysis that both are weakly correlated with each other and thus are likely orthogonal. We posit that a simultaneous focus (having both high promotion & high prevention orientations) will enable individuals to propose ideas that are both novel and useful. In line with studies on related concepts, we argue that individuals with both motivational orientations may balance different idea generation strategies to allow both creativity dimensions (Berg, 2014; Miron-Spektor et al., 2015). A person with a simultaneous focus would engage in eager creative behavior to ensure gains and maximize the rewards of a solution, while at the same time vigilantly consider its requirements for non-failure**.** We argue the foci would allow the person to simultaneously engage in (or alternate between) creative behavior with a goal for

solutions that reflect both creativity facets. Although Benack, Basseches & Swan (1989) theoretically proposed that such simultaneous thinking and balancing of dissimilar requirements could improve overall creativity, studies only recently began to investigate the effects of dual processes on workplace creativity (Berg, 2014; Miron-Spektor & Beenen, 2015). For example, Miron-Spektor and Beenen (2015) showed that individuals who were simultaneously induced with learning and performance goals, created more novel and useful products than individuals induced with one goal orientation. In line with their findings, we argue the effect of an induced simultaneous goal orientation on creativity would also translate to a simultaneous chronic regulatory focus. Specifically, a person with both foci may be able to adapt multiple requirements for creativity and simultaneously explore holistic novel as well as concrete useful solutions (Kleiman & Hassin, 2013; Lu et al., 2017; Steffens et al., 2016).

Compared to generating ideas with one dominant regulatory focus, creating ideas with a simultaneous focus increases access to both remote and local knowledge domains. Spanning such diverse knowledge domains should enable flexible and persistent idea generation, and benefit both creativity facets (Miron-Spektor, Gino, & Argote, 2011). A promotion and prevention focus simultaneously assures that individuals explore alternative solutions to achieve novelty, while selecting useful solutions to minimize mistakes. Empirical evidence from related fields supports the reasoning that a simultaneous focus benefits both novelty and usefulness. Neubert et al. (2008), for instance, showed how both foci had a simultaneous but distinct positive effect on work outcomes; promotion focus triggered creative behavior while prevention focus boosted in-role performance. Furthermore, studies in the organizational learning literature show an employee's simultaneous

promotion and prevention regulatory focus translates into high levels of firm exploration and exploitation (Kammerlander et al., 2015; Tuncdogan, den Bosch & Volberda, 2015). Translated to the individual level, the findings imply similar mechanisms for the creativity facets. Exploration for new ideas, which involves experimentation and broad search for new solutions is conceptually connected to novelty, while exploitation of existing knowledge, which involves focusing on effectiveness and refinement of solutions, is connected to usefulness (Gruys, Munshi & Dewett, 2011, March, 1991; Steele, Hardy, Day, Watts & Mumford, 2019).Therefore:

Hypothesis 1c: *Simultaneous promotion and prevention focus is positively related to a solution's novelty.*

Hypothesis 1d: *Simultaneous promotion and prevention focus is positively related to a solution's usefulness.*

To explore how promotion, prevention and a simultaneous focus may enable the degree to which ideas are novel and useful, we turn to the cognitive processes regulatory focus elicits (Cornwell & Higgins, 2016; Förster, Higgins & Bianco, 2003). We highlight the effect of underlying idea generation processes as they can determine the path through which individuals become creative (De Dreu et al., 2008).

The mediating role of cognitive processes to creativity under regulatory focus

Proponents of Dual Process Models of Creativity (DPCM) argue that creative ideas can be achieved equally well by two cognitive paths, each associated with thinking processes of flexibility and persistence (De Dreu et al., 2008). We argue that a promotion focus would motivate an employee to engage in cognitive flexibility to insure gains from novel solutions (Baas et al., 2011; Roskes, Elliot, Nijstad & De Dreu, 2013). Under a promotion focus, solutions are global and span various

knowledge domains (Förster & Higgins, 2005; Randell, 2013; Roese et al., 1999). In addition, promotion focus has been linked to divergent thinking and cognitive flexibility (Beuk & Basadur, 2016). Although to our knowledge how a regulatory focus results in novelty or usefulness via cognitive processes has not been tested yet, research suggests that cognitive flexibility facilitates novelty (Miron-Spektor & Beenen, 2015). When engaging in cognitive flexibility, individuals generate many unique ideas by switching often between different perspectives for a solution (Baas et al., 2013). Workplace creativity emerges as individuals access remote knowledge, combine new ideas into holistic solutions (Amabile, 1997) or form new connections among distant categories (Friedman & Forster, 2010; Koestler, 1964). Creativity is not narrow to a specific problem but addresses requirements across several remote domains. Scholars further highlight that global and divergent knowledge processing or relying on new thought content benefits the originality of ideas (Berg 2014; De Dreu et al., 2011; Friedman & Forster, 2010; Koestler, 1964). For instance, founders or managers with a promotion focus are more likely to explore various alternatives and maximize growth opportunities (Ahmadi et al., 2017; Kammerlander et al., 2015). Increased cognitive flexibility from a promotion focus should thus only benefit novelty. Because promotion-focused individuals propose holistic solutions, they may overlook its specific use that may require considering a narrow knowledge domain.

Hypothesis 2a: *Cognitive flexibility mediates the relationship between promotion focus and solution's novelty.*

On the flip side, we argue that people with a prevention focus would engage in cognitive persistence to make sure that ideas fulfill requirements of usefulness and to avoid potential mistakes from novelty. Prevention-focused people seek to ensure solutions are appropriate by engaging in subtractive and counterfactual thinking and

by proposing ideas within similar knowledge domains for a specific problem (Friedman & Förster, 2001; Sacramento et al., 2013). Their motivation is to reduce uncertainty with local and concrete solutions (Friedman & Förster, 2005; Higgins & Förster, 2005; Miron-Spektor & Beenen, 2015; Roskes, 2013; Steffens et al., 2016). They search for new ideas incrementally for a task at hand (Newell & Simon, 1972) and focus on 'known ideas' (Herzenstein et al., 2007). Prevention-focused people will use a persistent cognitive processing strategy (e.g. convergent thinking) in which they invest effort to explore a single solution or idea thoroughly (Lucas & Nordgreen, 2015; De Dreu et al., 2008). They propose useful ideas in a systematic way and access knowledge from a few domains, explore alternatives in depth and combine related ideas (Baas et al., 2008; Friedman & Forster, 2010). Prevention-focused individuals become creative over time through effortful generation of many ideas but within a few categories (Nijstad & Stroebe, 2006). Engaging in persistence with local and concrete thinking should nonetheless have no effect on novelty or originality of ideas (Friedman & Förster, 2005; Higgins & Förster, 2005; Miron-Spektor & Beenen, 2015; Roskes, et al. 2013). Therefore:

> ***Hypothesis 2b:*** *Cognitive persistence mediates the relationship between prevention focus and a solution's usefulness.*

Compared to generating ideas with one dominant regulatory focus, creating ideas with the two foci would allow individuals to use flexible and persistent idea generation, and thus benefit both creativity facets (Miron-Spektor, Gino, & Argote, 2011). Both systems would act independently as the promotion focus allows the individual to explore alternative solutions via flexibility to achieve novelty, while with a prevention focus the person would select useful solutions to minimize mistakes. Therefore, consistent with our rationale for our previous hypotheses, we expect the

effect of a simultaneous focus on novelty will be mediated via flexibility (from the promotion focus) and the effect on usefulness will be mediated via persistence (from the prevention focus).

We conducted two studies to test our hypotheses. First, we tested the direct effect of individual regulatory focus on perceived creative behavior in a work setting. We then isolated the effect of individual regulatory focus on cognitive processes and the creativity facets in a quasi-experiment. The second study thus investigated whether differences in promotion and prevention focus can predict creativity trade-offs and whether mediating cognitive processes can explain such trade-offs.

STUDY 1: INFLUENCES OF REGULATORY FOCUS ON NOVELTY AND USEFULNESS IN THE WORK CONTEXT

We first tested our hypotheses on the effect of regulatory focus on creativity in a field setting. The aim of Study 1 was to examine how promotion and prevention focus influences the degree to which a person's creative solutions are novel and/or useful in their work setting.

Method

***Sample & procedure*.** We invited 240 students from a European business school to participate in our research study, which consisted of two parts. The students were working in teams on an entrepreneurship business development project as part of their coursework and provided feedback about their peers´ creativity in the project. Data was collected from each team member with roughly 3-4 weeks between collection cycles. At time 1, we conducted a survey measuring self-reported levels of individual differences. At time 2, upon completion of the project, in a follow-up survey, each student was asked to provide feedback to their peers. They were asked to rate the degree their own and each of their peer's behavior fostered novelty

and usefulness. 147 students participated in the first part of the study, of which 135 received peer feedback in the second part of the survey. We removed 8 cases where students provided the same answer across all dependent and independent variables (e.g. indicating a 5 or a 1 on all responses) and we removed 2 cases in which only one student per team participated in the two studies. Thus, our final sample was 125 students[7] (a 52% response rate). 65% of the students had professional work experience. Their average years of work experience was 6 years. The largest group, 28% of the students, had 4 to 6 years of work experience. 38% were women and 51% of students received feedback from more than three peers.

Measures

***Dependent variable: Creativity*.** To alleviate potential common-method bias, we asked peers to rate the perceived creative behavior of each member, by adapting Sullivan and Ford's (2010) measure of novelty and usefulness. The authors showed that their two-dimensional measure with separate indicators for novelty and usefulness reflected creativity better than a one-dimensional measure of overall creativity. The original measure consists of four 7-point items for each creativity facet, where raters are asked to evaluate the degree solutions or products are, for example, useful or useless (original or unoriginal). However, we adapted the measure to the work context as we asked participants to rate their peer's creative behaviors during the project. Therefore, the measure reflected perceived behavior of peers fostering creative ideas instead of perceived creativity of a product. For novelty, instead of asking "How original or unoriginal is the product," we asked, "To what degree do the following members in your team create ideas, products or services that are creative.

[7] The response rate was in line with our expectations as the study was voluntary, and no rewards were offered for participation.

Specifically, for person A, ideas were: Original – unoriginal." Feedback from employees and managers in a small pilot study uncovered that two items of the original 8-item scale were poorly understood. We therefore dropped the items "innovative–not innovative" and "effective–ineffective" and assessed perceived novelty (alpha = .64) and usefulness (alpha = .81) with a 7-item measure.[8]

***Work regulatory focus*.** Participants completed Neubert and colleagues' (2008) Work Regulatory Focus Scale (WRF). For each focus, subjects indicated on a nine-item scale the extent to which they agree with each item (Likert-5; 1 = strongly disagree & 5 = strongly agree). Sample items for promotion focus (alpha = .74) included "I tend to take risks at work in order to achieve success" and for prevention focus (alpha = .79) "I do everything I can to avoid loss at work." Across several studies in work settings (Ahmadi et al., 2017; Byron, Peterson, Zhang & LePine, 2016; Zhou et al., 2017), Neubert et al.'s measure shows significant incremental validity over general regulatory focus measures (Johnson et al., 2015).

Controls. We controlled for gender, work experience (dummy coded 0 for no work experience and 1 for previous work experience) and entrepreneurial intention as they are shown to impact creative or innovative behavior at work (Frosch, 2011; Sauermann & Cohen, 2010). We measured entrepreneurial intention using Thompson´s (2009) 10-item Individual Entrepreneurial Intent Scale (alpha = .82). Example items included "Thinking of yourself, how true or untrue is it that you: Are saving money to start a business" and "Spend time learning about starting a firm" (1

[8] In a pre-study, we tested the feasibility with project teams working in a start-up. While the sample size with 20 participants was far too small for any statistical inference, overall feedback was good with a 75% response rate. The proposed measures were perceived as appropriate in the work context and the management team agreed that the creativity measures reflected workers´ creativity. However, the management team expressed that the items "innovative–not innovative" and "effective–ineffective" were not appropriate to measure creative behavior in a project context. In addition, in Sulivaqn and Ford´s original study, both items had the lowest zero order correlations with novelty (innovative) and usefulness (effective).

= very untrue & 6 = very true). Also, we controlled for the number of peer feedback ratings received per participant (Mean = 2.5, SD=1.0).

Insert Table 1 about here

Results

Table 1 displays the descriptive statistics and the Pearson correlations among the main variables. To analyze our data and to account for its nested nature, we used a multilevel analysis with a SPSS mixed-effects program (Heck, Thomas & Tabata, 2013; Hox, 2010). This allowed us to simultaneously estimate the effects of the factors at different levels on individual-level outcomes while maintaining appropriate levels of analysis for the predictors (Bryk & Raudenbush, 1992). Specifically, in our two-level model, individual-level scores were at Level 1, nested with Level 2 teams. As recommended by Hair, Black, Babin & Anderson (1998), given the small sample size of the respondents at the team level (N=33), we used maximum likelihood estimation. However, when investigating effects of predictors at Level-1 in multilevel models, McNeish and Stapleton (2014) showed the effects are relatively nondependent on the cluster size. Specifically, the authors showed that predictors at Level-1 remained unbiased at cluster sizes as low as 5 and as low as 15 for cross-level interactions. To assess improvement of model fit and thus explain variance, we performed a deviance difference test using Aikaike's Information Criteria (AIC; Hox, 2010). The general norm is to select the model with the smallest value on the AIC (Kwok, Underhill, Berry, Luo, Elliott & Yoon, 2009). Nonetheless, as the AIC is susceptible to sample size at the group level, we also assessed the model with Pseudo R2 statistics to explain the between-individual variance (la Du & Tanaka, 1989; Singer & Willett, 2003; Snijders & Bosker, 1999). It shows the reduction of Level 1 and Level 2 errors due to including new predictors to the model.

First, we checked whether there was significant rating variance across teams and thus estimated a null model to examine the between-team variability of the intercept ($\tau 00$) and intraclass correlation coefficients (ICC) for the dependent variables "novelty" and "usefulness".[9] ICC1 represents the proportion of variance in the outcome variable that resided between teams. We found significant variation between teams for both ratings of novelty ($\tau 00 = .099$, $p < .05$, ICC1 = .25; Table 3, Model 1) and usefulness ($\tau 00 = .126$, $p < .05$, ICC1= .21; Table 3, Model 7). For example, 25% (21%) of the variability in the students' novelty (usefulness) scores was due to team-to-team differences and 75% (79%) to student-to-student differences within teams. Therefore, we used a multilevel model to examine between group differences. First, gender and work experience as factors and entrepreneurial intention as a covariate were entered as Level 1 predictors (Table 2, Model 2 and Table 3, Model 7). We subsequently entered individual regulatory focus as Level 1 predictors to examine their effect on novelty and usefulness ratings.

Test of Hypotheses

Hypotheses 1a (1b) predicted a positive relation between individual promotion (prevention) focus and perceived Novel (Useful). Results from our analysis at the individual level could not support these hypothesized relationships (Table 2, Model 3 and Table 3, Model 8). Neither promotion nor prevention focus were significant predictors of perceived novelty ($\gamma_{pro} = - .036$, p=.78; $\gamma_{pre} = - .066$, p=.47) or perceived usefulness ($\gamma_{pro} = .019$, p=.90; $\gamma_{pre} = - .087$, p=.40). Next, we included an interaction term for promotion and prevention focus on both dependent variables to test Hypothesis 1c, that a simultaneous focus will have a positive relationship with

[9] We also investigated the variance across classes. We did not find significant variation between classes for both ratings of novelty (τ00 = .04, p > .05, ICC1 = .10) and usefulness (τ00 = .03, p > .05, ICC1 = .08) and therefore decided not to account for such differences with a three-level model.

perceived novelty and usefulness (Model 4 and 9). The hypotheses could not be supported as the interaction of promotion and prevention focus had no statistically significant effect on perceived novelty (γ = .205, p=.38) and perceived usefulness (γ = - .038, p=.88).[10]

Insert Table 2 about here

Post-hoc analysis

While we could not find support for our hypotheses that individual regulatory focus affected individual creative behavior, we tested if team regulatory focus could account for a person's novelty and usefulness. Wallace, Butts, Johnson, Stevens, & Smith (2016), for example, showed that team involvement climate had a cross-level effect on the innovation process of the employee. The team as a collective may share a dominant regulatory focus which can impact team members to adapt preferences, risk bias and goals to conform to expected behaviors (Dimotakis et al., 2012; Hekman, van Knippenberg & Pratt, 2016). Thus, in an exploratory vein and to spark future research on the effect of team regulatory focus on individual creativity, we present research questions instead of formal hypotheses.

Research question 1: Does team regulatory focus influence the degree to which team members' solutions are rated as novel and/or useful?

Research question 2: Does the team regulatory focus moderate the relationship between a team member's regulatory focus and the degree to which solutions are perceived as novel and/or useful?

[10] We conducted an a-priori power analysis, specifying a medium effect size and a standard .8 power. The analysis suggested a sample size of 114 for 9 predictors (4 controls, 2 IVs, 1 interaction and 2 team level effects).

Specifically, in line with compositional models of team emergent states, we operationalized team regulatory focus as the mean of promotion or prevention focus of the team members (Kozlowski & Klein, 2000; Morgeson & Hofmann, 1999). The aggregated regulatory foci scores thus acted as a proxy for a shared regulatory focus within the team, which can influence members' values, behaviors and strategies (Chan, 1998; Hamstra, 2014). We entered team promotion and prevention focus as predictors for novelty (Table 3, Model 5) and usefulness (Model 10). Team promotion focus had a significant positive relation with individual-level novelty (γ = .99, p = .01, CI95 = .262 to 1.722) and team prevention focus had no relation with individual-level novelty (γ = .20, p = .43, CI95 = - .305 to .703). Both team prevention (γ = .63, p =.042, CI95 = .231 to 1.235) and promotion focus had a positive effect on individual usefulness (γ = 1.04, p = .022, CI95 = .160 to 1.914). Finally, we investigated if team promotion and prevention focus would moderate the impact of individual regulatory focus on novelty and usefulness. We tested the regulatory focus (promotion and prevention) by team regulatory focus (promotion and prevention focus) interaction in the Level 1 model. The individual level predictors were group-mean centered to reduce potential multicollinearity in Level 2 estimation (Aguinis, Gottfredson & Culpepper, 2013). For novelty (Table 2, Model 6), the interactions between individual promotion or prevention focus and team regulatory focus were all insignificant ($\gamma_{proindxproteam}$ = .92, p = .189, CI95 = -.464 to 2.318; $\gamma_{proindxpreteam}$ = .29, p = .516, CI95 = -.832 to 1.415; $\gamma_{preindxproteam}$ = - .38, p = .42, CI95 = -.832 to 1.415; $\gamma_{preindxpreteam}$ = .45, p = .31, CI95 = -.422 to 1.314). Also, for usefulness (Model 12) the interactions were insignificant ($\gamma_{proindxproteam}$ = .03, p = .972, CI95 = -1.518 to 1.572; $\gamma_{proindxpreteam}$ = - .36, p = .569, CI95 = -1.604 to .887; $\gamma_{preindxproteam}$ = - .29, p = .583, CI95 = -1.325 to .749; $\gamma_{preindxpreteam}$ = .24, p = .625, CI95 = -.727 to 1.204). Also, for usefulness (Model

12) the interactions were insignificant ($\gamma_{proindxproteam}$ = .03, *p* = .972, CI95 = -1.518 to 1.572; $\gamma_{proindxpreteam}$ = - .36, *p* = .569, CI95 = -1.604 to .887; $\gamma_{preindxproteam}$ = - .29, *p* = .583, CI95 = -1.325 to .749; $\gamma_{preindxpreteam}$ = .24, *p* = .625, CI95 = -.727 to 1.204). Therefore, no support was found for a cross-level moderation of team promotion and prevention focus on the relationship between individual regulatory focus and the creativity facets.

Insert Table 3 about here

Study 1 Discussion

Study 1 conceptualized and measured regulatory focus as two separate measures adapted to the work context. Creativity was measured on the two dimensions of novelty and usefulness, which we assessed as the creativity ratings of individual behavior by team members. We could not confirm our hypotheses that individual regulatory focus had distinct effects on the two creativity dimensions. However, we found a similar pattern to our predictions when investigating the effect of team regulatory focus on individual creativity. Individuals had higher novelty and usefulness ratings in promotion-focused teams, while in prevention-focused teams, they had higher usefulness ratings. Although our findings of the differential influence of team regulatory focus on individual creativity are consistent with our previous reasoning, our first study has several limitations. Specifically, it is impossible to infer whether the effect of team regulatory focus on individual creativity results from influencing the individual in their ability for novelty and usefulness (e.g. priming a situational focus or via a climate) or from the rater's perception of the creative behavior. First, we were unable to disentangle the effect of team versus individual regulatory focus on creativity. Even though we accounted statistically for the influence of the team with a multilevel model and investigated a potential cross-level

interaction effect, we cannot distinguish the effect of individual versus team-level regulatory focus conceptually. For example, the team or the entrepreneurial context may prime a situational individual-level regulatory focus in the work context, and thus our assessment of the individual regulatory focus may not reflect an individual difference (Hekman, van Knippenberg & Pratt, 2016; Kark, Katz-Navon & Delegach, 2015). Also, individual regulatory foci may converge over time to a team regulatory focus, which we could not account for (Beersma, Homan, Van Kleef & De Dreu, 2013). We used individual regulatory focus to calculate an aggregate team regulatory focus and cannot determine causal inferences. Second, by relying on peer feedback, we measured perceived creativity, which may be susceptible to individual differences of the raters. Specifically, regulatory focus may influence the degree to which individuals perceive and rate peer ideas as novel or useful. For instance, Zhou et al. (2017) showed that individuals high in promotion focus were more able to perceive greater novelty, while the authors could find no such effect for usefulness. The authors found “between-person variation in the novelty and creativity ratings of the same target [creative product], showing that it was a function of the individuals’ state or trait regulatory focus.” (pg. 198). Thus, the influence of team regulatory focus on individual creativity may be explained by different abilities of the team members to perceive novelty or usefulness.

In our second study therefore, instead of focusing on perceived creativity, we focus on ‘normative’ creativity, defined as ‘the degree to which new solutions or ideas are being considered novel or useful by normative standards” (Zhou et al., 2017). In addition, we investigate the potential influence of underlying mechanisms that are linked to creativity (De Dreu et al., 2008). Hence, Study 2 took a finer-tuned approach, as it distinguished the relationships between individual promotion and

prevention focus, underlying cognitive processes and the two creativity facets. We measured trait regulatory focus on a promotion and prevention focus continuum. Individuals worked on a creativity task that allowed us to measure cognitive processes and resulting novelty and usefulness with normative standards.

STUDY 2 – THE INFLUENCE OF INDIVIDUAL PROMOTION AND PREVENTION FOCUS ON COGNITIVE PROCESSES AND NOVELTY AND USEFULNESS

Study 2 examines how individuals with different regulatory foci engage in flexibility and persistence and how the processes relate to the aspects of creativity. Confirming differential effects of the promotion and prevention systems on the ways people create ideas would allow first evidence that a person's regulatory focus can predict the paths of the DPCM and potentially several forms of creativity. In addition, we explored the effects of a simultaneous high regulatory focus.

Participants and Design

We recruited 227 participants from Amazon's Mechanical Turk (MTURK) who worked on a creativity task by using a virtual white board. They only qualified for the study if they lived in the United Kingdom or the United States and had a 98% approval rate for previous tasks. Scholars have shown that MTURK can be used as a valuable research tool (Johnson et al., 2017; Mor, Morris, & Joh, 2013; Sprouse, 2011). MTURK data can mirror a field study with external validity because findings are like those of studies with MBA student samples (e.g., Lanaj et al., 2012; Mor et al., 2013). In addition, participants are diverse, provide high quality data and can complete 'behavioral-type tasks' over extended periods of time, while the behaviors are "identical for online and face-to-face test takers" (Casler, Bickel & Hackett, 2013:2158). Our study thus reflects previous research that used results from MTURK samples to assess individual level processes, such as thinking, creativity and

brainstorming (Study 2 by Reyt & Wiesenfeld, 2015; Study 2-6 by Lucas & Nordgren, 2015; Chua, 2013; Lu et al., 2017).

To assess creativity facets, we relied on previous studies that measured novelty and usefulness separately in creativity tasks (Berg, 2014; Miron Spektor & Beenen, 2015). To facilitate overall creativity, participants received specific goals to develop a product idea that is both useful and novel (Shalley, 1991). In addition, we fostered motivation and psychological realism (Berg, 2014) with a raffle prize that was tied to creative performance in an area participants should have relevant knowledge about: products that can be sold online (such as Amazon or Ebay). Especially for online brainstorming tasks, framing the idea generation task to the known domain Amazon or Ebay should enhance performance (Berg, 2014, Krynicki, 2014). Finally, we decomposed the development task with specific instructions for novelty and usefulness to boost performance (Luo & Toubia, 2015).

Procedure and creativity task. The creativity study consisted of two steps. First participants conducted a survey to assess their regulatory focus and demographics.[11] Second, approximately one week later, they were invited to take part in the main creativity task. They were asked to imagine they worked for a marketing agency and the creative director asked them to create a new product that can be sold online, such as on Amazon Marketplace or Ebay. They had to create a new product that is creative, meaning both novel or original and useful or appropriate (Berg, 2014; Miron-Spektor et al., 2015). They began with a brain-storming task in which they listed in three minutes as many as possible creative products that can be

[11] We also included an attention check as a quality control for the online format (Lin & Russell, 2015; Oppenheimer, Meyvis, & Davidenko's, 2009). Before ending the first survey, participants were asked to describe a product they recently bought online (type, sales platform and price). Only participants who provided full details on the product were invited to the main creativity task.

sold. (see Appendix B for full instructions).[12] Instead of allowing participants to immediately move to the next stage after generating a fixed number of ideas (e.g. list three ideas), we used this fixed-time before participants could move to the next stage, because research shows individuals systematically generate creative ideas only when they examined unoriginal ideas first (Nijstad et al., 2010). Participants then chose one product idea from their list and for 15 minutes described it in greater detail. They were instructed to design a prototype by using a virtual white board. The virtual white board allowed participants to draw features of the product, describe its functionality and, in general, visualize their prototype. Following the research design of Berg (2014), we used this procedure to deepen cognitive processing or insight into problem solving, and to increase overall quality of the creative output (see also Chrysikou, 2006; Wen, Butler & Koutstaal, 2013). To steer participants into elaborating on their ideas, we ensured that they could not advance to the next stage before the 15 minutes passed. However, as time-pressure can constrain performance for prevention focus (Roskes, 2013), we framed the timeframe as a guide, but that subjects could take longer, without any negative impact on their performance assessment. To incentivize task performance, participants were informed that they would be included in a lottery for an $80 US Amazon voucher if their prototype ranked among the top five creative ideas (Lucas & Nordgren, 2015). The instructions for the creativity task were adapted to a virtual setting using procedures by Berg (2014) and by Miron-Spektor and colleagues (2015). (See Appendix B for more details.)

[12] We randomly framed the task as “novel and useful” and “useful and novel”.

Measures

Dependent variable creativity. In line with previous studies on novelty and usefulness, we used a consensual assessment to measure product creativity. In line with suggested practice (Zhou et al. 2017; Zhou & Shalley, 2003), two to three judges are usually enough to evaluate creativity. We thus asked three independent judges (with a Master's degree in engineering, business or consumer behavior), who were blind to the hypotheses and procedure of the study, to rate, for each prototype, its creativity facets (Amabile, 1996; Berg, 2014; Miron-Spektor & Beenen, 2015; Zhou et al., 2017). Specifically, we used Sullivan and Ford´s (2010) measure to assess each dimension on a seven-point scale (e.g., 1 = ordinary to 7 = unique) with three items each for usefulness and novelty[13.] Items were presented in random order with examples including: "How Original – Unoriginal is the prototype?" and "How Unique – Ordinary is the prototype?" (ICC2 = .76). Usefulness items included "How Useful - Useless is the prototype?" and "How Appropriate - Inappropriate is the prototype?" (ICC2 = .60)[14]. Raters were given detailed definitions of usefulness and novelty and then familiarized themselves with a first set of 20 ideas, which they subsequently rated. Ideas with high disagreement were discussed among the judges. To limit cognitive fatigue, they rated 40 ideas in random order over several days. Finally, the judges were asked to rate the first set of 20 ideas again. We averaged the ratings across the three items for novelty and usefulness (Amabile, 1996), which had good internal consistency (alphaN = .98; and alphaU = .79).

[13] Sullivan and Ford (2010) adapted Besemer and O'Quin's (1986) multi-dimensional semantic differential creativity scale to make it more understandable to an MBA student sample with students rating vignettes for start-up ideas.

[14] Lower inter-rater agreement for usefulness (and in comparison to novelty) is in line with previous studies on creativity facets (e.g. Berg 2014; Miron-Spektor and Beenen, 2015; Zhou et al. 2017).

Regulatory focus. We used the 11-item Regulatory Focus Questionnaire (Higgins et al. 2001), because we are primarily interested in the self-guiding principles of ideals and oughts (Johnson et al. 2015). Two subscales (Likert-5; e.g. 1-never; 5-always) assessed promotion and prevention focus separately. Example items were for promotion focus (alpha = .68) "Compared to most people, are you typically unable to get what you want out of life?" and for prevention focus (alpha = .82) "Growing up, would you ever 'cross the line' by doing things that your parents would not tolerate?" We also created an interaction term of promotion and prevention focus to operationalize the strength of a simultaneous focus.

Cognitive processes. We assessed flexibility and persistence by counting the number of ideas in a creative brainstorming task (Baas et al. 2008, De Dreu, Nijstad, Baas, Wolsink & Roskes, 2012). Following the procedure highlighted by Lu, Bartol, Venkataramani, Zheng & Liu (2019) and Tadmor, Galinsky & Maddux (2012), two research assistants (both with a Master of Science degree), who were blind to the study, categorized a subset of 30 ideas and then created a list of 12 categories for the product ideas (including one for 'other'). Both raters then used the categories to classify the remaining ideas. We used the aggregation across raters. C*ognitive flexibility (ICCflex = .92)* was assessed for each individual as the number of the unique usage categories from which ideas were proposed (Kaufman and Sternberg, 2010; Roskes, DeDreu & Nijstad, 2012).[15] Each category and idea that fell into the 'other' category were counted. Because "generating ideas in many different categories [flexibility] will, all other things being equal, be associated with more ideas overall [fluency]" (DeDreu et al:2008:740), we decided to also consider fluency, by

[15] For example: Facial crème, shampoo and razor-blades would be all in the same category 'beauty products' and thus have a score of 1. Keyboard, a beauty product and a health drink would be in three different categories and thus would have a score of 3.

counting the number of non-redundant and appropriate ideas (Baas et al., 2011). *Fluency*, the ability to produce many ideas (Simonton, 1997), may capture the ability to generate creative ideas and has been operationalized as a second dimension of cognitive flexibility (Guildford, 1967; Lu et al. 2017). However, the connection to overall creativity is inconsistent or even negative (Kim & Zhong, 2017; Montag, Maertz & Baer, 2012) and therefore we decided to account for it when investigating the effect of cognitive flexibility (Liu, Wang, Ren & Liu, 2017). We measured *cognitive persistence as within-category fluency*—by counting the number of unique ideas generated within a cognitive category divided by the number of categories ideas came from (ICCfluency = .98; see Nijstad et al., 2010; Nijstad & Stroebe, 2006).[16] Oddly worded or nonsense ideas, such as random text, were excluded (Nouri et al., 2014).

Controls. We employed work experience and gender as demographic control variables (Bledow et al., 2013).[17]

Insert Tables 4 about here

Results

Table 1 displays the means, standard deviations and correlations among the main measures. We used the PROCESS macro (Hayes, 2013, Model 4, 10.000 bootstrap samples) to investigate the direct and the indirect effect of regulatory focus on both creativity dimensions via cognitive processes (see Figures 3 and 4 for the effects associated with the pathways). Specifically, to disentangle the mediating effect of

[16] For example: Computer, phone, keyboard would all be in one category.
[17] We did not control for personality or affect as the meta-analysis by Lanaj et al. (2012) showed that regulatory focus is a mediator of distal personality variables and the effects on workplace outcomes remain significant even after controlling for other individual factors such as affect and personality.

cognitive flexibility, independent of the quantity of ideas generated, we controlled for fluency by including it as a second mediator (Preacher & Hayes, 2008). Cognitive flexibility and fluency acted as parallel mediators for promotion focus. For prevention focus, we included persistence as a single mediator. In support of Hypothesis 1a, promotion focus had a significant positive direct effect on novelty (*B* = .31, SE = .16, p= .045, 95% CI = [.003 , .624]), but not on usefulness (*B* = .11, SE = .081, 95% CI = [- .024, .24]). Hypothesis 2a, was partially supported as the indirect effect via fluency, was significant and negative, (*B* = - .10. SE = .06, 95% CI = [- .248, - .011]), while the indirect effect via flexibility was marginally significant and positive (B = .053, SE = .046 90% CI = [.001, .146]). As a result, the two mediators cancelled each other out and led to a totally insignificant indirect effect (*B* = - .05, SE = ..038, 95% CI = [- .134, .015]).[18] The total effect of promotion focus was therefore less significant after including the two mediators (*B* = .262, SE = .158, 90% CI = .000 and .524). For usefulness, there was a marginal negative indirect effect via fluency (*B* = - .0292, SE = .0214, 95% CI = [- .070, - .001]), no significant indirect effect via flexibility (*B* = - .0154, SE = .019, 95% CI = [- .010. .049]) and a non-significant total indirect effect (*B* = - .0138, SE = .013, 95% CI = [- .038, .043]). Taken together, these results provide support for Hypothesis 1a and 2a. A high promotion focus does result in more novelty solutions and the effect is partially mediated by cognitive flexibility. Hypothesis 1b could not be supported as prevention focus and had neither a direct effect on usefulness (*B* = - .005, SE = .053, p=.91; 95% CI = [- .038, .043]) nor on novelty (*B* = - .155, SE = .105, 95% CI = [- .361, .052]). Hypothesis 2b was not supported as the indirect effect via persistence on usefulness (*B* = .003, SE = .005, 95% CI = [- .007,

[18] The correlation between flexibility and fluency was significant with .81 (p<.01) and we therefore controlled for both cognitive processes by using a parallel mediation analysis (Hayes, 2018).

.016]) and novelty were not significant (*B* = .009, SE = .012, 95% CI = [- .01, .037]). Consequently, prevention focus does not predict creativity, neither the novelty nor the usefulness facet.

Insert Figure 2 about here

Insert Figure 3 about here

Finally, we investigated the effect of a simultaneous promotion and prevention focus by regressing the interaction of (mean-centered) promotion and prevention focus on novelty and usefulness (Hayes, 2013; Model 8). The interaction was insignificant (B = -.062, SE = .191; p=.756; 95% CI = [- .377, .253]). This was in line with our theoretical logic that the promotion and prevention focus operate independently. With a simultaneous focus, the individual's prevention focus on average does not impact the positive relationship between promotion focus and novelty. However, we were interested in exploring whether the independent effect of promotion focus on novelty was conditional on the level of prevention focus. We therefore decided to probe the overall non-significant interaction effect for different levels of the moderator (Hayes, 2017).

In line with recent empirical studies on moderation effects in organizational behavior and psychology (Mackey, McAllister, Maher & Wang, 2019; Miron-Spektor et al. 2018; Roczniewska, Retwoski & Higgins, 2018; Schütte, Blickle, Frieder, Wihler, Schnitzler, Heupel & Zettler, 2018; Zmigrod, Zmigrod, Rentfrow and Robbins, 2019) we used the Johnson-Newman (J-N) method to indicate quantitative values of the predictor (called significance regions), where the influence on the dependent variable is significant. We highlighted J-N points (90% CI) that indicate exact values

of the moderator where the influence of the predictor changes from significant to non-significant (Bauer & Curran, 2004; Gardner, Harris, Li, Kirkman & Mathieu, 2017; Hayes, 2013). The advantage of investigating significance of interactions with a “simple slopes” (Aiken & West, 1991) or pick-a-point approach (Rogosa, 1980) is that significance can be tested across a range of moderator values, instead of a chosen fixed point that may be arbitrary (Carden, Holtzman & Strube, 2017). For low and high values of prevention focus the relationship became insignificant. The results of the analysis are illustrated in Figure 4 for novelty. It represents the strength of the relation between the individual’s promotion focus on novelty, depending on the prevention focus. At $p < .10$ ($p < .05$) for novelty the J-N points (marked with a vertical dotted line) are - .73 (-.13) points and .47 (.21) points for prevention focus. Thus, for individuals who scored more than -.73 points on mean-centered prevention focus (2.5 on a 5-point scale), the higher their promotion focus, the more novel their ideas were. However, the relation ceases to exist for individuals who scored higher than .47 (3.7 out of 5) on prevention focus. This is partially consistent with our Hypothesis 2c, that a simultaneous regulatory focus fosters novelty. Promotion focus does not interact with prevention focus and thus it facilitates novelty independently. However, this association only holds at medium levels of the prevention focus, as at low and high levels of prevention focus the relationship between promotion focus and novelty ceases to exist. We repeated the same procedure for the effect or prevention focus on usefulness at different levels of promotion focus. The interaction was insignificant (B = -.101, SE = .097; p=.282; 90% CI = [- .266, .056]) and we did not find any statistically significant interaction regions. We therefore could not confirm our prediction that a simultaneous regulatory focus results in usefulness. Just as each

focus in isolation did not predict usefulness, their interaction did not have a significant effect either.

Insert Figure 4 about here

Study 2 Discussion

Study 2 conceptualized and measured promotion and prevention focus separately (Higgins et al., 2001). It supported our prediction that an individual's regulatory focus will have a distinct impact on the two creativity facets. Promotion focus had a positive relation on novelty. In addition, we found that cognitive flexibility mediated the relationship. Interestingly, promotion focus facilitated two processes on the flexibility path with opposing effects on novelty. Flexible thinking had a marginal positive indirect effect and fluency a negative indirect effect. This suggests that although promotion focus positively impacts novelty on its own and partially because it increases cognitive flexibility, it also facilitates cognitive processes that are detrimental to novelty. As a result, it appears the cognitive processes resulting from promotion focus are a double-edged sword, with a positive effect of proposing various idea categories and a negative effect of proposing as many ideas as possible. On the other hand, we could not find support for our prediction that prevention focus would be related to the usefulness side of creativity (nor did we find an association to the novelty side). Also, prevention focus was not related to cognitive persistence. Finally, and perhaps most interestingly, using the Johnson-Neyman technique, we showed that although the positive effect of promotion focus on novelty was statistically independent from prevention focus, the effect of promotion focus on novelty is limited to individuals with medium levels of prevention focus. This suggests that a simultaneous regulatory focus fosters novelty, because of

the positive effect of the promotion focus which is relatively independent of the prevention focus. However, there appears to be critical thresholds in which the promotion focus can benefit novelty. Individuals with too low prevention focus (which accounted for 19.4% of the sample) and too high prevention focus (33.3% of the sample) cannot benefit from their promotion focus to generate solutions.

DISCUSSION

Our research aimed to examine the way different regulatory foci of individuals affect creativity facets of novelty and usefulness. Combining research on regulatory focus and Dual Process Models of Creativity (Baas et al. 2008), we hypothesized that depending on their regulatory focus, people favor one dimension of creativity over the other. Unique cognitive processes facilitate both creativity facets. We also argued that a simultaneous promotion and prevention focus allows each focus with the associated cognitive paths to operate independently on creativity.

Via two studies – a field and an experimental, we found that a promotion focus influenced the creative process in line with our prediction. Although results from the field study point only to a positive effect of a team promotion focus on individual novelty, we found in the experimental study that individual promotion focus in isolation from the work context had a direct positive effect on novelty. Results from the experimental study further showed that cognitive flexibility mediated the effect, which consisted of two opposing processes. Promotion focus did not have a consistent effect across the studies on usefulness. While promotion focus at the team level predicted individual usefulness, we did not find a significant relationship in the experimental study. For prevention focus, we found that it had a significant effect on usefulness at the team level in Study 1. However, we did not find a relationship at the individual level in Study 2. Finally, our findings showed across the studies that for a

simultaneous focus, the promotion and prevention focus acted independently. Thus, on average, individuals with a simultaneous focus seem to be as able to generate novel ideas as individuals with a high promotion focus. Nonetheless, the effect only operated at medium levels of prevention focus as at high and low levels, promotion focus did not foster novelty.

Theoretical Implications

The current research makes several important contributions to the literature on creativity. First, we offer a refined view on emerging research on workplace creativity, comprised of two separate dimensions of creativity as we explain how cognitive processes precede the two dimensions (Berg 2014; Miron-Spektor & Beenen, 2015; Zhou et al. 2017). Prior research often aggregated novelty and usefulness ratings, which likely explains the inconsistent results of regulatory focus on creativity (Montag et al., 2012). As we investigated the effect of each focus by controlling for the other focus, we disentangled their unique effect in the creative process. In addition, we separated the cognitive processes from the creative behavior, which studies often use as proxy measures for creativity (Montag et al., 2012). As a result, our study is among the first to investigate the full path of the creative process and shows that individual differences facilitate cognitive processes which in turn lead to creative outcomes. It is interesting to note that across the studies, the pattern for promotion focus was in line with our prediction for novelty, whereas the effect on usefulness and the effect of prevention focus on both creativity dimensions had little effect. At the same time, prevention focus did not limit creativity. As our study suggests that prevention focus has neither an effect on novelty nor on usefulness, this null finding is in line with earlier research that showed prevention focus, in itself, had no statistically significant effect on creativity (Lanaj et al. 2012). Studies that previously

showed a direct effect of prevention focus on creativity, either found a direct relationship to a cognitive process that acted as a proxy for creativity or had a boundary condition that changed the relationship to creativity (Baas, De Dreu and Nijstad, 2011; Roskes et al., 2012). To our knowledge, our study was the first that disentangled the cognitive processes and the resulting creativity output for prevention focus. In summary, we can therefore only confirm for promotion focus the key thesis of our study: that just as employees can propose creative ideas on distinct paths, so too does their effect on the creativity dimensions differ.

Second, we found a differing effect of the two mediators resulting from promotion focus. While several studies confirm that promotion focus is an important factor for creativity and related behaviors (Lanaj et al. 2012), to our knowledge, no research so far has investigated how this effect occurs for workplace creativity. While promotion focus fosters flexible thinking, which helps novelty or originality, it also fosters another side of flexibility - fluency - with a negative indirect effect on novelty. We thus addressed calls for more complex mediation models of creativity (Zhou & Hoever, 2014), as we explored how promotion focus as an individual difference had a differential relationship with the underlying cognitive processes and in turn, a distinct relationship with the creativity facets. These findings suggest distinct aspects of flexibility and underscore the need for creativity studies to distinguish cognitive processes of quantity and quality in idea generation from creativity outputs (Kim et al. 2017).

Third, this study adds new explanations of why and how promotion and prevention focus jointly facilitate creativity. Because promotion and prevention focus are relatively orthogonal (Lanaj et al., 2012), some individuals will have a simultaneous promotion and prevention goal orientation. In line with these findings, in

the field and in the experimental study, promotion and prevention focus on average did not interact. This suggests that individuals with a simultaneous focus can relish their promotion focus to generate novel ideas. However, there appears to be a critical range of prevention focus. Individuals with a promotion focus require a minimum level of prevention focus to generate novel ideas (e.g. a minimum sense of duty to ensure ideas pass a quality level), while too high levels of prevention focus limit the beneficial effects of promotion focus. To our knowledge, this is the first study that explores the differing interaction effect of promotion and prevention focus on creativity in general, and on the two facets specifically.

Limitations and implications for future research

Our study is an early-stage inquiry in the nascent field of empirically investigating predictors for novelty and usefulness and thus has limitations. In our field study, the creativity measure that assesses both novel and useful behavior has not yet been tested. Most studies use expert judgments and then assess creativity as the consensual agreement between judges (Amabile, 1982; Baer & McKool, 2009). Using peer feedback may lack the validity of expert judges. In addition, regulatory focus of the raters themselves can result in different perceptions of novelty (Zhou et al., 2017). To address this potential shortcoming, we accounted statistically for team level variation. In addition, incongruent goals or values between the ratee and the rater may influence the rating subconsciously. We therefore instructed participants that peer assessment had no influence on their perceived performance and was only for information. Also, we investigated our prediction in a laboratory study to isolate the effect of individual regulatory focus and to measure creativity more objectively.

Nonetheless, the study remains at the individual level and thus may overlook the important influence the team may play. Considering the strong effect of team

level regulatory focus on individual creativity, future research could isolate its effect first in a laboratory study and later in longitudinal field studies. It will be critical to independently capture individual regulatory focus from the group influence and to triangulate the rated creativity measures with normative creativity ratings. Such studies could explore the role of regulatory fit (Higgins, 2005). Regulatory fit theory is an effective lens to clarify the mechanism in the creative process (Higgins, 2000), as it sheds light on the conditions that change the effects of promotion and prevention focus. It describes the “relation between the manner of goal pursuit and the self-regulatory orientation of the person pursuing the goal” (Higgins, Idson, Freitas, Spiegel and Molden, 2003:1141). Studies could investigate the influence of the collective team goal orientation on the individual’s creativity trade-off and the team’s creative behavior. Future studies could disentangle regulatory fit between different teams, a situational and chronic individual regulatory focus and novelty and usefulness. Such research would add to the nascent field of studying how a collective regulatory focus or team culture emerges and translates into novelty and usefulness for the group (Johnson et al. 2015; Roczniewska, Retowiski & Higgins, 2018; Shin, Kim Choi & Lee 2016). Ultimately these studies would refine interactional models of creativity by uncovering the *relative* importance of individual and contextual factors on creativity (Anderson et al., 2014).

Our quasi-laboratory study relied on MTURK samples that may limit external validity. Especially in the workplace, creativity may take very different forms. Therefore, we chose not to rely on proxy measures for creativity (e.g. brick task) but instead to assess creativity with a product design task where individuals had to develop ideas into a prototype. This design suggests our findings can translate to the workplace (Gino, 2009; Miron-Spektor and Beenen, 2015). The specific design setup

allows us to gain a richer understanding of how individuals generate ideas, since we investigate the role of cognitive processes. While our 18-minute period for the creativity task is short, it is in line with other studies on novelty and usefulness (Berg, 2014; Miron-Spektor and Beenen, 2015). Yet, the stage in the creative process may have an important influence on when individual differences relate to aspects of creativity. Although speculative, prevention focus may influence creative solution generation in later stages of creativity when individuals focus on the usefulness side (Perry-Smith and Mannucci, 2017; Rosing, Frese, & Bausch, 2011). The fact that we had a similar pattern in the field setting for team promotion focus on individual novelty, provides however some support that we can generalize our findings to the field over longer periods of time. A second opportunity for future research is to investigate the effect of promotion and prevention focus on the creativity facets at different stages of the creativity process.

A third avenue for future research is to investigate the effect of more complex forms of interacting factors (Anderson et al., 2014). For instance, future studies could investigate moderating conditions, such as individual and contextual factors, that influence a person's ability to benefit from their regulatory foci. In addition, future research could answer calls for more realistic creativity models in the workplace (Jin, Wang & Dong, 2016; Miron-Spektor, Ingram, Keller, Smith & Lewis, 2018), where actors not only react to their experience, but also take their success into their own hand, by changing the impact of their experience on their creative thoughts.

As distinct emotions have been linked to the cognitive processes of the DPCM (Baas et al., 2008), a fourth and final opportunity for future research is to investigate their effect in complex serial mediation models and study their relative importance for creativity. In addition, a worker's ability to cope with emotions could impact the

creative process (Hennessey & Amabile, 2010). For example, Emotional Reappraisal (ER), a knowledge-based and goal-oriented strategy to re-evaluate an emotional stimulus (Lalot, Delplanque & Sander et al., 2014), can enhance or weaken the intensity of affective responses (Steinberger et al., 2011). ER is especially useful in complex circumstances over longer periods of time (Sheppes, Scheibe, Suri, Radu, Blechert & Gross, 2014) and could be an important boundary condition to explain when 'negative' factors for creativity can translate into positive factors. We hope our exploration of the relative interaction effect between the two foci will open fruitful discussion in the creativity literature in which scholars move away from the simplistic conceptions of 'good' versus 'bad' states to a dialectic understanding of individual factors (Bledow, Rosing & Frese et al., 2009).

Lastly, our study has practical implications. First, our study underscores the fact that the work context may substantially affect the degree to which creativity reflects novelty or usefulness. Whether the context determines individual creative behavior because it influences an employee's ability to become creative, or because it influences how ideas are perceived, remains open to discussion. However, companies would benefit from clearly specifying normative criteria for creativity facets in the workplace. Our results further highlight that the ability of individuals to produce creative solutions may largely reflect the novelty side of creativity, but not the usefulness side. Without it, solutions nonetheless will likely not be appropriate for the marketplace and ultimately fail.

CONCLUSION

Novelty and usefulness together form distinct facets of creative ideas. Our study investigated the role individual differences in regulatory focus play in facilitating such different facets. Our findings suggest that resulting cognitive processes may explain

how individuals generate ideas with different degrees of novelty and usefulness. Although we distinguished promotion and prevention focus and found that they independently relate to creativity and cognition, the benefits of promotion focus on solution's novelty were conditional on levels of prevention focus. Extreme high and low levels of prevention focus both hindered the positive effect of promotion on novelty.

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APPENDIX A

Calculation for the Pseudo R-square using Snijders and Bosker's (1999:102 -103) formula:

$$R_1^2 = 1 - \frac{\hat{\sigma}^2(full) + \hat{\tau}_0^2(full)}{\hat{\sigma}^2(null) + \hat{\tau}_0^2(null)}$$

"Variance accounted for in Yij by level-1 predictors.

'full' refers to the model tested and 'null' refers to the model without predictors, or the empty model. σ^2 is the within-group variance and τ_0^2 is the between group (or intercept) variance."

APPENDIX B

Study 1 – Instructions Creativity assessment by peers

In the following you will have the opportunity to give feedback to your peers about how they behave creatively. This is a constructive feedback and has no influence on your or their performance rating whatsoever. You will see several statements about someone´s ideas. Starting with yourself and then your team members, please choose the statement that fits best. Think back to your project work and in general how members in your team show creative or innovative behavior. To what degree do the following members in your team create ideas, products or services that are creative? Specifically, for person A, ideas were: 1 = ordinary to 7 = unique [7-point scale].

Study 2 – Instructions brainstorming task

In the next three minutes, please list and describe as many potential product ideas you can propose to the creative director. The ideas should be creative, meaning they are novel and useful.

Study 2 – Instructions prototype task

From the ideas you proposed before, please choose one idea to design a creative prototype, with text and drawings.

Use the virtual white board to show how the product might look like, and

- Describe your idea with text (boxes). You must write several sentences to explain it.
- Draw the prototype with its functions

Your prototype would be judged by the creative director by how creative it is. The prototype should be novel, meaning as unique or original as possible, and useful, meaning appropriate or valuable for an effective use for something (e.g. object, solution, product).

If your prototype is among the five most creative ideas, you will participate in a lottery for an $80 US Amazon voucher.

From the ideas you proposed before, please choose one idea and in the next 15 min., design a prototype for the creative director to sell online such as on eBay™ or Amazon Marketplace™ Specifically:

- write text with text boxes (several sentences) to describe it and
- draw it to show it´s function.

Here again your ideas from before and choose one (shows the ideas they proposed before).

Study 2 - Additional analysis

We also investigated if work experience moderated the effect of regulatory focus on the cognitive processes leading to creativity outputs. Using the Hayes Macro with 10,000 bootstraps (Model 7) the interaction of work experience and promotion focus on fluency (*B* = .421, SE =.29, *p* = .15) and flexibility (*B* = .190, SE = .13, *p* = .14) were not significant. The interaction of work experience with prevention focus on persistence was also insignificant (*B* = .068, SE = .04, *p* = .11).

Moreover, we investigated if promotion focus may lead to usefulness via persistence. However, promotion focus had no direct effect on usefulness when controlling for persistence (*B* = .1, SE = .08, 95% CI = [- .06 , .26]), and the indirect effect was insignificant via persistence (*B* = - .00, SE = .01, 95% CI = [- .02 , .01]). Also, prevention focus had no significant direct effect on novelty when controlling for flexibility and fluency (*B* = - .00, SE = .01, 95% CI = [- .02, .01]).

TABLES AND FIGURES

TABLE 1

Descriptive Statistics and Correlation Matrix (Study 1)

	Variable	Mean	SD	1	2	3	4	5	6	7	8
1	Novelty ratings	3.13	.63	(.64)							
2	Usefulness ratings	3.60	.78	.54**	(.81)						
3	Gender	.65	.48	-.21	.03	-					
4	Work experience	.60	.49	.12	.16 †	.10	-				
5	Entrepreneurial intention	3.87	1.12	.17	-.07	.32	-.16	(.82)			
6	Number of peer feedback	2.53	1.03	.08	.06	.07**	.54**	-.00	-		
7	Promotion Focus	4.37	.47	.07	.02	.11	-.04	.35**	-.26	(.74)	
8	Prevention Focus	3.92	.61	-.09	-.01	-.20*	-.11	-.29**	-.10	-.02	(.79)

Note: Individual N = 125; teams N = 33. The reliability of applicable measures are displayed on the diagonal of the matrix (in parentheses). Gender (0 = *male*; 1 = *female*). Work Experience (0 = no work relevant experience, 1 = professional work experience). † $p < .10$ (two-tailed); *$p < .05$ (two-tailed); **$p < .01$ (two-tailed). Caution must be exercised in interpreting some of these relationships because the study analyses were conducted taking into the account that individuals are nested within the team level.

TABLE 2

Multilevel Modelling Results: Novelty (Study 1)

Predictors	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	3.13	2.84	3.27	6.92	-1.30	-1.00
	(.07)	(.31)	(.68	(4.22)	(1.88)	(1.90)
Control variables						
Gender		.13	.13	.15	.10	.12
		(.12)	(.12)	(.12)	(.12)	(.12)
Work Experience		-.10	-.08	-.09	-.14	-.12
		(.17)	(.17)	(.17)	(.16)	(.16)
Entrepreneurial		.06	.06	.06	.07	.07
Intention		(.05)	(.06)	(.06)	(.06)	(.06)
Number of Peer		.02	.02	.01	.00	.01
Feedback		(.07)	(.07)	(.07)	(.07)	(.07)
Independent variables (Level 1)						
Promotion Focus			-.04	-.84	-.15	-5.26
			(.13)	(.93)	(.14)	(3.99)
Prevention Focus			-.07	-.98	-.07	-.17
			(.09)	(1.05)	(.10)	(2.50)
Promotion x				.21	-	.
Prevention Focus				(.23)	-	-
Independent variables (Level 2)						

Team Promotion					1.00**	.80*
Focus					(.36)	(.34)
Team Prevention					.20	.11
Focus					(.25)	(2.50)
Cross Level						
Interaction						
Individual promotion x						.93
team promotion focus						(.70)
Individual promotion x						.29
team prevention focus						(.57)
Individual prevention x						-.38
team promotion focus						(.47)
Individual prevention x						.45
team prevention focus						(.44)
Variance Component						
Residual	.30	.32	.31	.31	.31	.30
Intercept	.10	.08	.09	.08	.05	.06
AIC	266.46	246.30	249.68	25.92	246.56	251.31
Pseudo R2		.01	.00	.02	.09	.11

Note: Model 6 predictors for the cross-level interaction have been group-mean centered. Standard errors are in parentheses. *R*-square values indicate percentage of variance in the dependent variables accounted for by each of the models (Snijders & Bosker, 1999). †p < .10 (two-tailed); *p < .05 (two-tailed); **p < .01 (two-tailed).

TABLE 3

Multilevel Modelling Results: Usefulness (Study 1)

Predictors	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Intercept	3.59	3.92	4.24	3.55	-2.21	-2.20
	.09	.36	.76	4.69	2.31	2.33
Control variables						
Gender		-.06	-.05	-.05	-.08	-.07†
		(.13)	(.13)	(.13)	(.13)	(.13)
Work Experience		-.26	-.26	-.26	-.34†	-.34
		(.21)	(.21)	(.21)	(.19)	(.20)
Entrepreneurial Intention		-.05	-.07	-.07	-.06	-.05
		(.06)	(.06)	(.06)	(.06)	(.06)
Number of Peer		.01	.01	.01	.00	.00
Feedback		(.08)	(.08)	(.09)	(.08)	(.08)
Independent variables						
(Level 1)						
Promotion Focus			.02	.17	-.07	1.20
			(.14)	(1.03)	(.15)	(4.43)
Prevention Focus			-.09	.09	-.12	.21†
			(.10)	(1.17)	(.10)	(2.77)
Promotion x Prevention				-.04	-	-
Focus				(.26)	-	-

Independent variables						
(Level 2)						
Team Promotion Focus					1.04*	.95*
					(.43)	(.41)
Team Prevention Focus					.63*	.51†
					(.30)	(.29)
Cross Level Interaction						
Individual promotion x team promotion focus						.03
						(.78)
Individual promotion x team prevention focus						-.36
						(.63)
Individual prevention x team promotion focus						-.29
						.53
Individual prevention x team prevention focus						.24
						.49
Variance Component						
Residual	.48	.38	.37	.37	.37	.37
Intercept	.17	.15	.16	.16	.11	.11
AIC	329.46	276.42	279.72	281.70	276.08	283.27
Pseudo R2		.13	.12	.12	.21	.21

Note: For Model 12, predictors for the cross-level interaction have been group-mean centered. Standard errors are in parentheses. *R*-square values indicate percentage of variance in the dependent variables accounted for by each of the models

(Snijders & Bosker, 1999). †$p < .10$ (two-tailed); *$p < .05$ (two-tailed); **$p < .01$ (two-tailed).

TABLE 4

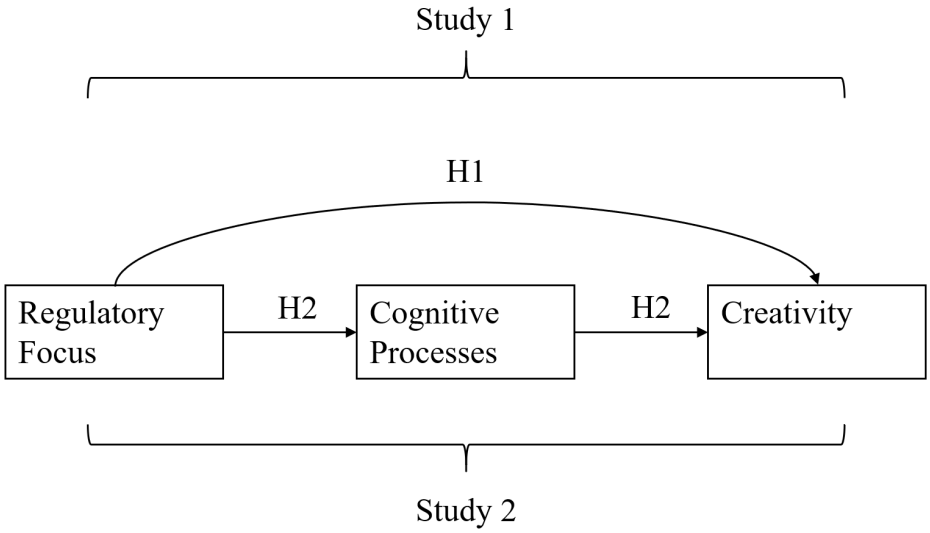
Descriptive Statistics and Correlation Matrix (Study 2)

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1	Novelty	4.53	1.20	(.98)								
2	Usefulness	5.20	.61	.39**	(.80)							
3	Flexibility	3.06	1.42	-.04	-.01	-						
4	Fluency	4.71	3.22	-.14*	-.06	.81**	-					
5	Persistence	1.56	.69	-.09	-.06	-.05	.44**	-				
6	Gender	.57	.50	.00	.08	.13*	.11	-.02	-			
7	Work Experience	4.22	1.26	-.07	.10	-.05	-.02	.00	.00	-		
8	Promotion Focus	3.48	.54	.08	.09	.10	.11	-.01	.06	.07	(.68)	
9	Prevention Focus	3.25	.82	-.05	.02	-.01	-.03	-.06	.07	.05	.36**	(.80)

Note: Individual N = 227. The reliability of each applicable measure displayed on the diagonal of the matrix (in parentheses). Gender (0 = *male*; 1 = *female).* Work experience (0 = no work experience, 1 = under 2 years, 2 = 2-4 years, 3 = 4-6 years, 4 = 6-8 years, 5 = more than 8 years). † $p < .10$ (two-tailed); *$p < .05$ (two-tailed); **$p < .01$ (two-tailed).

FIGURE 1

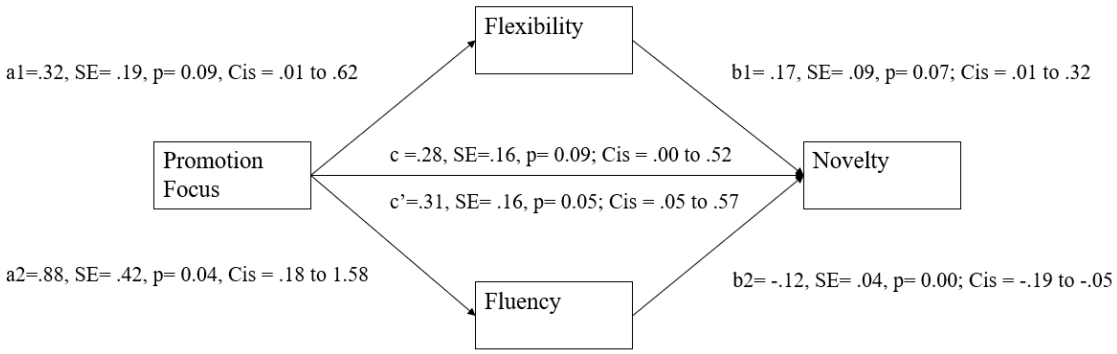
Conceptual Framework



Study 1 investigates the direct effect of regulatory focus on the two creativity facets, novelty and usefulness. Study 2 investigates the effect of regulatory focus on novelty and usefulness via cognitive processes.

FIGURE 2

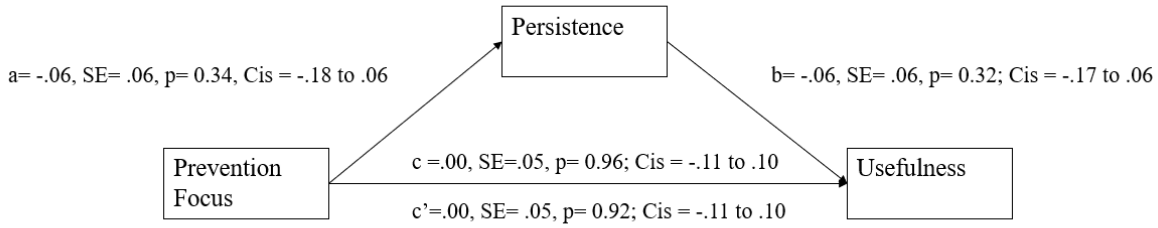
Illustration of an Indirect Effects Model for novelty (Study 2)



c = Total Effect (Promotion Focus affects novelty)
ab = Total Indirect Effect (Promotion Focus affects novelty through cognitive flexibility and fluency)
a1b1 = Specific Indirect Effect: Promotion Focus affects novelty through cognitive flexibility
a2b2 = Specific Indirect Effect: Promotion Focus affects novelty through fluency
c′ = Direct Effect (Promotion Focus affects novelty after controlling for a Total Indirect Effect and/or a Specific Indirect Effect)

FIGURE 3

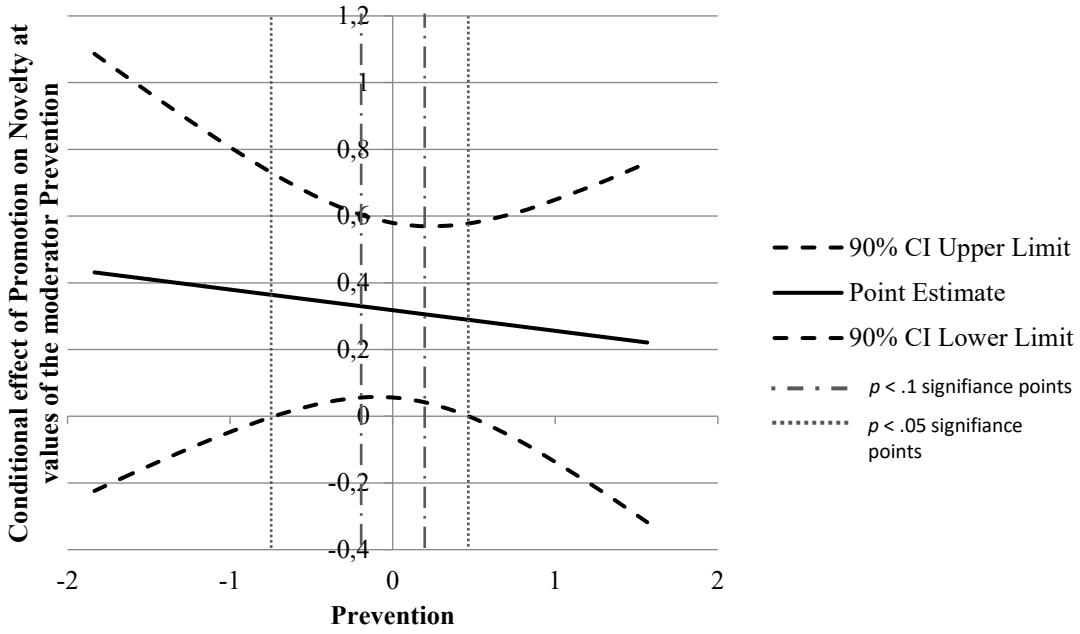
Illustration of an Indirect Effects Model for usefulness (Study 2)



c = Total Effect (Prevention Focus affects usefulness)
ab = Total Indirect Effect (Prevention Focus affects usefulness through cognitive persistence
c′ = Direct Effect (Prevention Focus affects usefulness after controlling for a Total Indirect Effect)

FIGURE 4

Johnson-Neyman plot: Conditional effect of promotion focus on novelty for different levels of Prevention Focus (Study 2)



Johnson-Neyman plot. The solid line represents values of the adjusted effect of promotion focus on novelty (controlling for gender and work experience) across all observed values of prevention focus (centered). The curved dashed lines represent the 90% (95%) confidence bands around the adjusted effect of promotion focus.

CHAPTER III - IS IT ME OR THEM? RETHINKING INTERACTIONAL CREATIVITY MODELS AS THE RELATIVE REGULATORY FIT BETWEEN A PERSON AND THE ORGANIZATION

ABSTRACT

Numerous studies have recognized the importance of the organizational context for boosting or hindering employee creativity. Yet the influence of organizational context on the individual-level idea generation process remains unclear. We draw on regulatory focus and fit theory to propose and test the effects of how organizations influence employee creativity as a result of congruent goal orientations. Our study predicted that the match between an individual and his/her organization's collective regulatory focus orientation will influence the individual´s ability to explore or exploit ideas. We test our predictions in two studies investigating the effect of employee regulatory fit (or misfit) with their organization. Both studies show that regulatory fit, both perceived and actual, influences an employee's ability to show creative behavior. In addition, we show that individuals with a simultaneous focus can function more creatively in organizations with either a collective promotion or prevention focus.

CHAPTER III - IS IT ME OR THEM? RETHINKING INTERACTIONAL CREATIVITY MODELS AS THE RELATIVE REGULATORY FIT BETWEEN A PERSON AND THE ORGANIZATION

Individuals rarely work alone when generating creative ideas or solutions (Cross, Rebele, & Grant, 2016). Contextual factors impact their ability for creativity in the workplace, defined as novel and useful solutions within a specific social domain (Amabile, Conti, Coon, Lazenby, & Herron, 1996). They may either directly impact an employee´s creativity or indirectly interact with an individual's disposition for creativity (Zhou & Su, 2010; Zhou & Hoever, 2014). Extensive research has shown that the context in which employees work can boost, hinder, or change an employee´s idea generation process (George & Zhou, 2007; Kark, Dijk & Vashdi, 2018; Wallace, Butts, Johnson, Stevens & Smith, 2016) and increasingly scholars are investigating the role that the social context of an organization plays in enabling workplace creativity (Brown & Baer, 2015; Harvey, 2014; Ilgen, Hollenbeck, Johnson, & Jundt, 2005 Madjar, 2005; Perry-Smith, 2006).

Although research has identified various cross-level factors and processes interacting with an employee's creativity, to date the underlying mechanisms are unclear (Gong, Kim, Lee & Zhu, 2013; Dong et al., 2015). Research outcomes are frequently inconsistent, as studies have shown that the organizational context may enhance or hinder employee creativity (Zhou & Hoever, 2014). The influence of a context is described as one-directional, with either a positive or negative effect. Individuals, however, use distinct strategies to generate ideas and likely react differently to the influence of their context. Scholars therefore call for studies to integrate models across levels and to differentiate how individual and organizational level factors work together to promote novel and useful ideas (Anderson, Potočnik &

Zhou, 2014). A recent meta-analysis on creativity underscored the need for empirical studies to explicate and test causal relationships across levels and to account for their interaction (Sarooghi, Libaers & Burkemper, 2015). To date, we do not yet know whether the processes that predict novelty and usefulness at the individual level operate similarly when considering effects of the interplay between organizational and individual factors (Zhou, Wang, Song & Wu; 2017).

The aim of this research is to address this challenge by examining how the organizational context influences an individual´s strategy to generate ideas (see Figure 1). Specifically, we examine when and how the organizational context as a collective influences a person's creativity. Although scholarly work suggests that organizational factors can have a substantial impact on a person's creativity, it is currently unclear how. We use two theoretical perspectives to clarify the mechanisms of this interplay: regulatory focus and fit theory (Higgins, 1997; Higgins, 2005). We propose that a person's regulatory focus, comprising both a promotion and prevention focus, explains the core motivation and idea generation processes on two paths to novel or useful creativity. Regulatory fit theory (Higgins, 2000) clarifies the interface between the person and their context. When people pursue their goal in a manner that suits their regulatory orientation, they experience an increased sense of value from "fit". In turn, this strengthens motivation, psychological processes, such as information processing and risk perception, and pro-active behavior in goal pursuit (Higgins, 2005) and hence we argue benefits resulting in creativity. On the other hand, when individuals work in contexts that do not align to their goal orientation strategy, they experience misfit, which in turn can harm their ability to generate creative ideas or solutions.

Although earlier studies investigated regulatory focus on creativity in organizational contexts (e.g. Gong et al., 2013; Wallace at el. 2016), this study extends the research in two critical ways. First, it recognizes that the social context of the workplace can influence how individuals engage in creative behavior (novel or useful ideas). Although research has uncovered how organizational factors relate to organization- or team-level creative performance (Amabile, et al., 1996; De Jong & Den Hartog, 2010), to our knowledge studies have not yet explored multilevel approaches. Thus, there is a gap in empirical work that combines distinct idea generation processes at the individual level and their interaction with contextual factors.

Second, the study provides a micro-logical view of the interplay between individual and contextual factors that shape workplace creativity. The paper investigates the organization's collective focus and argues that the workplace, just as the individual, can exhibit a dominant promotion or prevention focus. We explore the direct and interactive relationships of individual and organizational regulatory focus with facets of creativity. Therefore, individuals can be influenced by the collective regulatory focus of their workplace that may be congruent with or differ from their goal-preference and the way they approach them. To date, organizational level regulatory focus has received little attention by scholars who have focused primarily on team level collective focus (Hamstra, Sassenberg Van Yperen, Wisse & Rietzschel, 2015; Shin, Kim, Choi & Lee, 2016). One exception, an empirical study by Roczniewska, Retowski & Higgins (2018), investigated the effect of organizational regulatory focus on individual outcomes. The authors showed that collective regulatory focus could operate at an organizational level and impacted individual perception and performance at work via regulatory fit. However, to our knowledge, no

study has explored the role organizational collective regulatory focus plays in individual workplace creativity. It is therefore difficult to understand how and when the workplace will fit or misfit with one's regulatory focus and affect distinct creativity processes. Building on emerging research of collective regulatory focus, we will argue that organizations can display a collective regulatory focus, which can provide fit to an individual's regulatory focus. This, in turn, will influence the degree and way in which employees exhibit creativity. Articulating how and when a collective regulatory focus affects an individual therefore contributes to our general understanding of how individuals experience more complex forms of regulatory fit. The paper aims to determine whether the organizational context is capable of changing the creative strategy of the individual above and beyond enhancing or limiting creative outcomes, answering calls to investigate the nature of configurations of individual and contextual factors in promoting aspects of creativity (Anderson, et al., 2014; Gilson & Shalley, 2004; Zhou et al., 2017).

THEORY AND HYPOTHESIS

In the last two decades, scholars have increasingly begun to investigate the interaction between individual factors with organizational context to understand workplace creativity (Woodman, Sawyer & Griffin, 1993). As a result, the field has moved away from simpler main-effect models, which, for instance exclusively focused on the effect of isolated personality traits (Anderson et al., 2014). Research shows that it is not only the interaction that matters but also the fit between the person and the context. Such interactive models offer further explanations of why sometimes opposing individual characteristics can lead to creativity (Zhou & Hoever 2014). For example, interacting factors of the organizational context can bring out beneficial individual characteristics (Zhou, Hirst, & Shipton, 2012). Therefore, some

interacting contextual factors can change a negative individual factor, such as ‘negative aroused emotions’, into a positive effect (systematic and persistence idea generation). While classification systems describe those contingent interactions for workplace creativity (Shin & Zhou, 2003; Zhou and Hoever 2014), they are silent on the underlying mechanisms. In the following section, we introduce regulatory focus theory to explain the motivational mechanisms that clarify when and how congruence between a collective regulatory focus and an individual’s regulatory focus can influence an individual’s creative outcomes.

Insert Figure 1 about here

Idea generation via Regulatory focus & fit with the context

Regulatory focus theory distinguishes between two basic self-regulatory systems that individuals use when attaining goals. The theory describes why individuals are motivated to achieve goals and how they self-regulate during goal pursuit to fulfill the needs of the two foci (Lanaj, Chang, & Johnson, 2012). People with a promotion focus strive for positive outcomes and use eager strategies to fulfill their hopes and aspirations. Promotion-focused individuals strive towards seeking pleasure (Higgins, 1997) with a prime motivation to achieve ideals. In contrast, people with a prevention focus are concerned with avoiding negative outcomes. They use vigilant strategies to avoid mistakes, to ensure obligations and to meet duties. While strong contexts can influence an employee’s expression of regulatory focus, studies show that regulatory focus can be conceptualized as a chronic and relatively stable individual trait (Higgins, 1997, 2000; Lanaj et al., 2012). A person’s regulatory focus plays a vital role in stimulating flexible and persistent idea generation. It

influences cognition and behaviors such as risk-perception and perseverance (Higgins et al., 1997), goals (Foerster, Higgins & Idson, 1998), decision-making and thinking style (Crowe & Higgins, 1997).

Considerable evidence links promotion focus to the flexibility path and prevention focus to the persistence path of the afore-mentioned Dual Process Models of Creativity (Baas et al., 2013; Roskes, De Dreu & Nijstad, 2012). Under promotion focus, employees strive eagerly to maximize gains, by exploring as many opportunities as possible (Foerster & Friedman, 2001; Gorman et al., 2012). A positive risk bias and holistic information processing often associates with divergent and flexible idea generation of original and novel solutions (De Dreu, Nijstad & Baas, 2011). Thus, we argue a person with a promotion focus is more likely to engage in creative behavior resulting in novelty. By contrast, individuals with prevention focus use vigilant strategies to ensure their solution fulfills duties. They exploit few ideas to avoid errors and failure (Kammerlander, Burger & Fueglistaller, 2015). Risk aversion, local information, and systematic information processing manifests in convergent and persistent idea generation for useful solutions (Cornwell & Higgins 2016). Hence, with a prevention focus, the individual is more likely to engage in creative behavior resulting in usefulness. Finally, promotion and prevention focus are not opposites on a continuum but independent motivational orientation strategies that are relatively orthogonal (Johnson et al., 2010; Lanaj et al., 2012). A person with a simultaneous, balanced or ‘dual’ regulatory focus would balance eager behavior for goal maximization with vigilant behavior to ensure against failure. We propose that a dual focus would enable employees to switch or simultaneously engage in flexible and persistence search for ideas. In line with studies on related concepts, the simultaneous pursuit of multiple orientations (Steffens, Gocłowska, Cruwys &

Galinsky, 2016) or of distinct idea generation strategies can boost both novelty and usefulness (Miron-Spektor & Beenen 2015). Therefore, we argue that a person with a simultaneous regulatory focus will engage in creative behavior allowing both novelty and usefulness.

Idea generation, however, does not happen in a vacuum (Baer, 2016; Harvey & Kou, 2013) but individual and contextual factors can enhance, limit, or change the resulting creative output (Anderson et al., 2014). Under regulatory fit theory, the effect of regulatory focus on work outcomes can be shaped by how congruent environmental factors are to an individual's goal pursuit strategy (Higgins, 2000). For example, the organizational context can frame expected goals and emphasize desired behaviors from employees, which may match a person's promotion or prevention focus (Lee & Aker, 2004). Empirical research shows that when people pursue their goal in a manner that matches their regulatory orientation, they experience a 'feeling of right' about their current goal pursuit strategy (Higgins, 2005). This 'feeling of right' in turn strengthens previous judgements, decision-making, or attitudes, and increases cognitive performance and engagement in work behavior (Higgins, 2005). With a few exceptions in the related organizational learning literature (Kammerlander et al., 2015) and innovation literature (Wallace et al., 2016), research on the effect of regulatory fit for workplace creativity is still relatively unexplored. Those studies focused on the effect of regulatory fit on general creative outcomes and mostly focused on the team or the organizational level. To our knowledge regulatory fit has not been adapted to predict distinct creative behavior of employees in their workplace. For example, Ahmadi, Khanagha, Berchicci and Jansen (2017) investigated the effect of regulatory fit on individual exploration and exploitation behavior in two experimental studies in which they manipulated a regulatory focus

organizational context with video clips of a fictional manager. They found that regulatory fit intensified the negative effect of individual prevention focus on exploration for individuals, while they did not find a statistical effect for individual promotion focus. However, their findings are only marginally relevant for understanding the effect of the organizational context on individual workplace creativity. First, regulatory fit most likely operated at the leader instead of the organizational level, as their manipulation showed a video of a manager discussing individual (and not organizational) promotion or prevention goals. Second, the design did not allow for the authors to investigate if and how the strength of fit or misfit affects individual creative behavior. Finally, the authors summarized the exploration and exploitation behavior into one continuous variable and thus could not disentangle the impact of promotion or prevention focus on distinct creative behavior.

Nevertheless, we argue that the beneficial effects of regulatory fit on engagement and performance in the workplace (for a review see Johnson et al., 2015) will also translate to benefits for workplace creativity. Moreover, we propose that the experience of 'feeling right' transfers to current idea generation strategies and increases individual engagement and cognitive processing on the chosen creativity paths to novelty or usefulness. At the same time, non-fit leads to lower cognitive ability and decreased engagement in goal pursuit (Higgins, 2000). Specifically, when employees pursue their goals in a manner at odds with their orientation, they experience a negative evaluation of their current idea generation strategy. We thus suggest that nonfit or misfit weakens creative behavior towards novelty or usefulness.

Regulatory focus can arguably apply to organizations and influence an employee's idea generation through regulatory fit. By investigating the interaction

between the person and the organizational context with regulatory fit theory, we offer a lens that can explain the mechanisms of interacting factors across various levels. In summary, we argue that the interacting effect of a factor on an individual's workplace creativity depends on the degree to which it matches the person's goal orientation strategy.

Collective regulatory focus

An organization, as a collective of interdependent individuals, can converge in terms of the way its members work, structure tasks, and interact between themselves (Morgeson & Hofmann, 1999). Conceptually, the collective regulatory focus of an organization is closely related to organizational culture, which is defined as a "pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems. (Schein, 1992: 12)". At the organizational level, Tsui & Raver (2015) propose that a shared goal orientation manifests itself in shared values, assumptions, and beliefs that communicate to employees expected goals and behavior in the organization. Members in the organization would align, in particular, on their preference for maximizing rewards with eager strategies or for ensuring duties with vigilant behaviors. Once formed as a collective phenomenon, it becomes a relatively stable shared reality among organizational members (Schein, 1990) and informs employees about the 'right' way to behave within the workplace (Hardin & Higgins, 1996). An organizational context that displays a collective focus can provide regulatory fit via the goal pursuit strategy (Higgins et al., 2003), information processing between members (Zhao & Penchman, 2007) and via non-verbal behavior and emotions (Cesario & Higgins; 2008). Its

perceived orientation towards goals, specifically the collective regulatory focus, should influence the person's creative process.

While research on collective regulatory focus is still sparse, evidence at the team level confirms a collective focus can affect processes at the individual level (e.g. study 2 in Sacramento et al., 2013). A team regulatory focus emerges if each member's orientation manifests itself at the higher team level over time (Kozlowski et al., 2013). Such a collective regulatory orientation emanates from the behaviors or mindsets of each member (Hekman, van Knippenberg & Pratt, 2016). Several authors propose teams can converge on decision making and goal orientation, which leads to a dominant regulatory focus of the collective (Beersma et al., 2013; Rietzschel et al., 2011). For instance, Levine et al., (2000) showed that over time teams converged on their risk bias in decision-making as its members developed a shared reality (Stasser et al., 1989).

Similar mechanisms operate at the organizational level in which the members homogenously share a "reality concerning strategic orientation towards risks with problem solving skills converging as a result of priming" (Kark & van Dijk, 2007). The more employees can shift the self to the organization (Tajfel, 1981) - for example via social information processing, attraction, selection and attrition processes, and social verification (Chadwick & Raver, 2015) - the more likely a collective focus emerges. A collective focus can emerge from the interplay between similar regulatory foci among members and/ or a context with clear guiding principles for complex problems (Beersma et al., 2013; Gibson, 2001; Shin et al., 2016). In addition, a collective focus can emerge from members with dissimilar focus as the environment can activate a situational regulatory focus among members via language, feedback, or rewards (Brockner & Higgins, 2001). Thus, an organization with a shared collective focus

could prime the situational regulatory focus of the individual. For example, at the team-level, Dimotakis, Davison & Hollenbeck (2012) showed that primed team level situational regulatory focus influenced group level outcomes such as affect, behavior, performance and satisfaction. Also, Johnson, King, Lin, Scott, Walker & Wang (2017) showed that leader regulatory focus and behavior (such as transformational or management by exception behavior) primed follower's regulatory focus. At the organizational level, a collective promotion focus communicates expected risk-taking behaviors and places value on eager behaviors to approach gains (Roczniewska et al., 2018). On the other hand, an organizational collective prevention focus emphasized the need for security and to communicate values that demand vigilant strategies to avoid losses. In summary, an organization as a collective could have a similar (opposite) motivation system to the individual which would allow regulatory fit (misfit). The regulatory focus of the organization should be a strong contributor to the individual's experience of regulatory fit.

Regulatory fit therefore depends on the degree of congruence between the person and the organization's motivational orientation. In line with person–organization fit theory, congruence would refer to similarity between the norms and values of the employee and those of the organization (Kristof, 1996). People who experience regulatory fit demonstrate higher performance (Shah, Higgins & Friedman, 1998) and perceive arguments as more persuasive (Aaker & Lee, 2001; Cesario, Grant & Higgins, 2004). Particularly relevant, regulatory fit increases processing fluency and effective risk assessment (Lee & Aaker, 2004). An organizational context that matches a person´s goal orientation is likely to lead an individual into perceiving that her current idea generation strategy is the right one, as regulatory fit increases the confidence in previous decision making (Avnet et al.,

2013). The original creative behavior reinforces as task performance and persistence improves (Förster, Higgins & Bianco, 2003; Higgins 2000). Furthermore, the tendency for risk assessment and risk-taking behavior strengthens but the direction does not change (Avnet & Higgins, 2006; Itzkin, Van Dijk & Azar, 2016). Not only is someone more motivated to meet a creative goal under fit, but also more likely to achieve it (Spiegel et al., 2004; Hong & Lee, 2005). This should especially happen for creativity as regulatory fit boosts goal directed behavior in complex situations (Higgins et al., 1994; Cesario et al., 2004). Employees that can use their primary problem-solving strategies are less overwhelmed but more effective (Byron, Peterson, Zhang & LePine, 2016).

An organization with a regulatory focus similar to that of the employee would boost both the novelty and usefulness aspects of employees' creative behavior. Also, the organization itself likely influences a person´s desire to align with the goal pursuit strategies of peers to avoid the consequences of misfit (Shah et al., 1998). As part of the collective, an individual is likely to express similar strategies of idea generation that are expressed in the organization. If the goal orientation between the organization and individual match, then the consequences and possible value of creative solutions align with the personal dispositional goal orientation. Regulatory fit would impact the idea generation processes, and increases creative behavior to complete initial ideas and engagement towards the means that facilitate a goal, regardless of outcome (Cesario et al., 2004; Higgins et al., 1994; Higgins et al., 2003; Latimer & colleagues, 2008; Spiegel, Grant-Pillow & Higgins, 2004;). Misfit, on the other hand, would limit an employee's creativity. Specifically, dissimilarity theory (Tsui, Egan & O'Reilly, 1991) suggests that individuals would classify themselves as "outgroup" members and would likely adapt if needed to represent a token minority.

Although an individual may adapt to the expectations of others to self-enhance or to avoid uncertainty and conflict (Hogg & Abrams, 1993; Randel & Jaussi, 2008), acting in ways that are not aligned to this intrinsic goal pursuit strategy is likely to result in a feeling of misfit and a decrease in creative behavior.

Hypothesis 1: *Individuals high in promotion focus will exhibit higher (lower) levels of novel creative outcomes within promotion (prevention)-oriented organizations.*

Hypothesis 2: *Individuals high in prevention focus will exhibit higher (lower) levels of useful creative outcomes within prevention (promotion)-oriented organizations.*

Similar mechanisms of regulatory fit should apply to someone with a simultaneous focus. The person would integrate the demands of both motivational systems with their distinct cognitive processes (Kleiman & Hassin, 2013) which should result into creativity that reflects both novelty and usefulness. In addition, the person would experience a complex situation as they would need to bridge the demands of both foci with that of the organization (Ritter et al., 2012), which would enhance overall creativity (Fong, 2006). Both organizational prevention and promotion focus would match to one of the dispositional regulatory foci of the individual. As a result, the person would experience regulatory fit for one of the foci which would strengthen engagement in idea generation, cognitive processing, and goal directed behavior and thus enhance overall creativity.

Hypothesis 3: *Individuals high in both promotion and prevention focus will exhibit higher levels of novel and useful creative outcomes within promotion or prevention-oriented organizations.*

To examine these hypotheses, we conducted two studies. First, in Study 1, we used an MTURK sample to assess whether perceived regulatory focus of the organization influences the idea generation processes of the individual. In Study 2, we aimed to replicate the findings in an organizational setting, but instead of using *perceived* regulatory focus, we used *actual* regulatory focus as the average collective promotion or prevention focus within organizations.

STUDY 1

The purpose of study 1 was to examine the affect of regulatory fit between individuals and their organization on creative behaviour. We expected that the more an organization matched an individual's regulatory focus, the more the employee would engage in creative behavior resulting from their regulatory focus.

Respondents

We invited a panel of employees from an online crowdsourcing platform (MTURK) to participate in a two-part study. Participants qualified for our survey if they were full-time workers in the US and had at least a 98% approval rating for their earlier tasks. 893 individuals participated in the first part of our study (time 1), where we asked them to describe various work-related activities in a few sentences and measured their regulatory focus. We invited only workers who described work related activities to the second survey, which took place approximately two weeks later (time 2). 274 participants continued with the second survey, of which 225 completed it. Here we included measures of their creative behavior, their perceived organizational regulatory focus and general demographics. We excluded 6 participants from the survey who failed the attention check. Thus, our final sample was 219 participants (53.4% female; Mage = 37.3, SDage = 10.9, 69% with at least a college degree).

Measures

Exploration and Exploitation for facets of creativity. We measured novelty and usefulness creative behavior using ambidexterity measures of individual exploration and exploitation behavior in the work context. Exploring new opportunities served as a proxy for original or novel creative behavior, while exploiting existing opportunities served as a proxy for useful or appropriate creative behavior. Ambidexterity measures have been shown to be especially helpful in organizational settings to distinguish aspects of employee´s idea generation, creativity, and innovation (Ahmadi, Khanagha, Berchicci and Jansen, 2017; Hardy, Day & Arthur, 2019; Kammerlander at al., 2015). For example, Steele (2019) showed that individual exploration was positively related to novelty in a product development task, while exploitation was positively related to usefulness (exploration was related to usefulness and exploitation was not related to novelty). We used Mom et al.'s (2018) 14-item measure that asked employees to rate the degree to which they previously engaged in exploration and exploitation related activities (Likert-7; 1 = to a very small extent to 7 = to a very large extent). Example items for exploration (alpha= .85) reflecting flexibility in fostering novel ideas included: "Searching for new possibilities with respect to products/services, processes, or markets", "Evaluating diverse options with respect to products/services, processes, or markets", and "Activities requiring quite some adaptability of you". For exploitation, reflecting persistence in pursuit of useful ideas, items included (alpha= .83): "Activities of which a lot of experience has been accumulated by yourself", "Activities which serve existing (internal) customers with existing services/products", and "Activities which you can properly conduct by using your present knowledge".

Dispositional Regulatory Focus. We measured participants' dispositional regulatory focus at work with Neubert, Kacmar, Carlson, Chonko, and Roberts's (2008) Work Regulatory Focus Scale (WRF). For each focus, subjects indicated on a nine-item scale the extent to which they agree with each item (Likert-1; 1 = strongly disagree and 5 = strongly agree). Sample items for promotion focus (alpha= .89) included: "I tend to take risks at work to achieve success". and for prevention focus (alpha= .86) "I do everything I can to avoid loss at work". We also created an interaction term of promotion and prevention focus to operationalize the strength of a simultaneous focus.

Perceived Organization Regulatory Focus. We used the six-item scale that Shin et al., (2016) created to assess collective regulatory focus. The authors adapted the Neubert et al.'s (2008) Work Regulatory Focus scale by applying a team referent shift. In order to capture a perceived collective prevention and promotion focus at the organizational level, we revised the items to organizational-referent items. Example items for perceived organizational prevention focus included (alpha = .63): "People in my workplace concentrate on completing their work tasks correctly to increase their job security" (security), and "At work, people in my workplace focus their attention on completing their assigned responsibilities." Items for perceived organizational promotion focus included (alpha= .65): "People in my workplace take chances at work to maximize their goals for advancement" (gains), and "If the job of people in my workplace did not allow for advancement, they would likely find a new one" (achievement).

Controls. We controlled for gender, age, and extraversion (2 items from the BFI-10 measure; alpha= .65) as each factor has been shown to impact creative or innovative behavior at work (Frosch, 2011; Proudfoot, Kay, & Koval, 2015, Sauermann &

Cohen, 2010).We also intended to control for education, however it did not correlate with any of the study variables and therefore we decided to drop the variable from the analysis. Taken together, we hence included three control variables in all subsequent analyses.

Insert Table 1 about here

Results and Discussion

Table 1 displays the means, standard deviations and the correlations among study variables. To investigate the effect of fit (misfit) between individual and organizational regulatory focus we followed a two step-process suggested by Roczniewska et al., (2018). First, using the PROCESS Macro (Hayes, 2013; Bootstrapping with 95% confidence bias-corrected intervals), we conducted four separate analyses in which promotion focus (prevention focus) served as the predictor, the control variables as covariates, organizational promotion or prevention regulatory focus as the moderator and exploration (exploitation) as the dependent variable. The variables were mean-centered and to isolate the effect of each dispositional and perceived organizational focus, we controlled for the other focus subsequently by entering the variable as additional covariates[19]. Second, we used the Johnson-Neyman procedure to probe regions of significance, which indicates quantitative values of the moderator where the predictor is significant versus non-significant for the dependent variables. The technique is recommended for interactions among continuous variables, as it provides a more holistic view on the conditional effect of the predictor (Bauer and

[19] For example, when investigating the moderating effect of a perceived organizational promotion focus on the relationship between dispositional promotion focus and exploration, we included perceived organizational prevention focus and dispositional prevention focus as two separate covariates

Curran, 2005; Carden, Holtzman & Strube, 2017). It is increasingly used in organizational behavior and psychological science because it avoids the limitation of arbitrarily picking values of the moderator, as in simple slopes analysis (Miron-Spektor et al., 2018; Mackey, McAllister, Maher and Wag, 2018; Schütte, Blickle, Frieder, Wihler, Schnitzler, Heupel & Zettler, 2018; Zmigrod, Zmigrod, Rentfrow and Robbins 2019). We thus plotted interaction patterns with Aiken and West's (1991) procedure (at the 16th and 84th percentile) and probed the conditional effects with the Johnson-Neyman procedure.

Insert Table 2 about here

Insert Table 3 about here

Dispositional Promotion Focus. Both dispositional promotion (B= .47, SE= .10. p= .00, 95% CI = [.276 to .661]), and perceived organizational promotion focus had a positive direct effect (B= .369, SE= .09, p= .00, 95% CI = [.197 to .541]) on exploration (see table 2). All covariates had no significant effect on exploration (gender, extraversion, dispositional prevention and organizational prevention focus: p>.10; age: p>.05). The interaction between dispositional promotion and perceived organizational promotion focus was not significant (figure 2; B= .13, SE= .09, p= .17, 95% CI = [-.031 to .309]). However, the Johnson-Neyman procedure highlighted a mean-centered moderator value of -1.45 (figure 3). It indicated the exact values of the moderator organizational promotion focus, where the influence of an individual's dispositional promotion focus changes from significant to non-significant (Bauer &

Curran, 2005; Gardner, Harris, Li, Kirkman & Mathieu, 2017; Hayes, 2013). In other words, for perceived organizational promotion focus scoring less than 2.6 on a 1 to 5 scale, the predictor dispositional promotion focus does not influence the outcome exploration. Next, we investigated the moderating effect of perceived organizational prevention focus. The interaction of dispositional promotion with perceived organizational prevention focus had a marginally negative effect on exploration (B= -.19, SE= .11, p= .10. 90% CI = [-.376 to .000]), while the main effect of dispositional promotion (B= .42, SE= .09, p= .00, 90% CI = [.270 to .582]) and organizational promotion focus (B= .37, SE= .09, p=.00, 90% CI = [.229 to .518]) remained positive (see table 3). The covariates age (B= .22, SE= .11, p=.05, 90% CI = [.039 to .408]) and organizational promotion focus (B= .37, SE= .09, p=.00, 90% CI = [.229 to .518]) were significant predictors of exploration, while gender, extraversion and individual prevention focus were not significant (p>.10). We plotted the relationship between dispositional promotion focus and exploration for scores of perceived organizational prevention focus at the 16th and 84th percentile (figure 4). The two-dimensional plot suggests that perceived organizational prevention focus marginally weakens the positive effect of dispositional promotion focus on exploration. In addition, at p= .05 (p=.10) the Johnson-Neyman (J-N) point was at .83 (.97), indicating when the effect of dispositional promotion focus on exploration becomes insignificant. This means that within organizations perceived to have a very high prevention focus (4.8 out of 5), there is no significant link between dispositional promotion focus of individuals and exploitation (figure 5). The results are thus in line with Hypothesis 1, as individual promotion focus has a positive relationship with individual creativity reflecting novelty in organization with a promotion focus, but not in organizations with a high prevention focus.

Insert Figure 2 about here

Insert Figure 3 about here

Insert Figure 4 about here

Insert Figure 5 about here

Dispositional Prevention Focus. Dispositional prevention (B= .28, SE= .11, p= .02, 95% CI = [.051 to .501]) and perceived organizational prevention focus (B= .24, SE= .10. p=.02, 95% CI = [.042 to .437]) had a positive main effect on exploitation (see table 3). None of the covariates had a significant effect on exploitation (p>.10). The interaction between dispositional prevention focus of the individual and perceived organizational prevention focus was marginally significant (figure 6; B= -.23, SE= .12, p= .06, 95% CI = [-.485 to .006]). The Johnson-Neyman procedure highlighted the transition point at .16 (figure 7), which suggested that the effect of dispositional prevention focus on exploitation was insignificant for organizations with a perceived high prevention focus (4.2 on a 1 to 5 scale). Next, we investigated the moderating effect of perceived organizational promotion focus. Dispositional prevention focus had a positive main effect on exploitation (B= .25, SE= .11, p= .03, 95% CI= [.030 to

.467]), while organizational promotion focus had no main effect (B= .065, SE= .08, p= .42, 95% CI= [-.092 to .221]). None of the covariates had a significant effect on exploitation (p>.10), except for organizational prevention focus (B= .30, SE= .10. p=.00, 95% CI = [.108 to .496]). The interaction between dispositional prevention with perceived organizational promotion focus had a negative effect on exploitation (B= -.37, SE= .11, p= .00, 95% CI= [-.567 to -.166]) and the interaction plots suggested that organizational promotion focus decreases the positive effect of dispositional prevention focus on exploitation. At p=.05 the J-N point was at .074 (figure 9). This means that in organizations with a perceived medium to high promotion focus (3.7 out of 5) there is no link between an individual's dispositional prevention focus and exploitation. Our hypothesis 2 hence could only be partially confirmed, as counter to our predictions very high levels of perceived organizational prevention focus limited prevention-focused individuals to engage in exploitive creative behavior reflecting usefulness. Nonetheless, in line with our hypotheses, high levels of perceived organizational promotion focus decreased for prevention-focused employees' exploitative behavior reflecting usefulness.

Insert Figure 6 about here

Insert Figure 7 about here

Insert Figure 8 about here

Insert Figure 9 about here

Dispositional simultaneous regulatory focus. In order to explore the effect of simultaneous dispositional regulatory focus on both facets of creative behaviors, we classified individuals into distinct groups based on their dispositional regulatory focus in comparison to the sample mean (Idson et al., 2000; Markovits, Boer & van Dick, 2014). In line with Kammerlander et al., (2015) individuals were assigned to four groups, which were labeled as: 1) low promotion focus and low prevention focus (none), 2) low promotion focus and high prevention focus, 3) high promotion focus and low prevention focus, and 4) high promotion focus and high prevention focus (simultaneous). We then used a regression with multi-categorical independent variables to test our third hypothesis (Hayes and & Preacher, 2014). We used the indicator coding approach to create four dummy variables, with each variable reflecting the regulatory focus categories (with the low-low group acting as the comparison group). We investigated the effect of each group on overall creative behavior, which we conceptualized as ambidexterity (the simultaneous exploration and exploitation of employees). In line with García-Granero, Fernandez-Mesa, Jansen and Vega-Jurado (2018), overall creativity (ambidexterity) was measured as the sum of exploration and exploration behavior instead of their product. We regressed ambidexterity on each dummy variable that represented the dispositional regulatory focus groups, centered perceived organizational regulatory foci and their interaction. To interpret the interaction effects, we created several graphs of the effect of the three groups on ambidexterity at the low (16^{th} percentile) and high (84^{th} percentile) values of the moderators, perceived organizational promotion and

prevention focus. Including perceived organizational promotion focus as a moderator (and controlling for perceived organizational prevention focus) showed that dispositional promotion focus (B= .76, SE= .33, p= .02, 95% CI= [.118 to 1.402]) and a dispositional simultaneous focus (B= .81, SE= .34, p= .02, 95% CI= [.139 to 1.477]), but not a dispositional prevention focus (B= .50, SE= .33, p= .14, 95% CI= [-.157 to 1.156]), had a significant main effect on ambidexterity. Perceived organizational promotion focus (B= .73, SE= .25, p= .00, 95% CI= [.241 to 1.225]) had a significant main effect on ambidexterity, but it did not interact with the three groups of dispositional regulatory focus of the individual (see table 4). Specifically the interaction with dispositional prevention focus (B= -.55; SE= .36, p= .13; 95% CI= [-1.255 to .157), dispositional promotion focus (B=.17, SE=.38, p=.66, 95% CI= [-.578 to .917) and a dispositional simultaneous were not significant (B= -.27, SE= .38, p= .47, 95% CI= [-1.022 to .476]). Next, we investigated the interaction effect of perceived organizational prevention focus on the relationship between dispositional regulatory focus of the individual and ambidexterity. When including perceived organizational prevention focus as a moderator (and controlling for perceived organizational promotion focus), dispositional regulatory focus had a significant direct relationship with ambidexterity (B= 1.33, SE= .30, p= .00, 95% CI= [.745 to 1.914]). Individual dispositional prevention (B= .37, SE= .31, p= .23, 95% CI= [- .234 to .981]) and promotion focus (B= .48, SE= .34, p= .16, 95% CI= [- .183 to 1.142]) had no direct relationship with ambidexterity, while a simultaneous dispositional focus had a positive direct effect (B= .73, SE= .33, p= .03, 95% CI= [.087 to 1.373]). The interaction of perceived organizational prevention focus was significant and negative with all three groups of dispositional regulatory focus of the individual: interaction with dispositional promotion (B= -1.37, SE = .43, p=.00, 95% CI= [-2.212 to - .518]); with

dispositional prevention (B= -1.03, SE =.47, p= .03, 95% CI= -1.951 to - .115]); and with dispositional simultaneous focus (B= -1.74, SE = .44, p= .00, 95% CI= [-2.608 to -.879]). Therefore, our findings do not support Hypothesis 3 as a perceived organizational promotion focus does not boost the positive effect of a dispositional simultaneous focus on ambidexterity reflecting overall creativity (figure 10). In contrast to our expectations, the positive relationship between a dispositional simultaneous focus and ambidexterity becomes negative in organizations with a high perceived prevention focus.

Insert Table 4 about here

Insert Figure 10 about here

Insert Figure 11 about here

Post-Hoc Analysis

Although we did not hypothesize a moderation effect of perceived organizational regulatory focus on the relationship between individual dispositional regulatory and ambidexterity, we ran several post-hoc analyses to investigate such a potential effect (see tables 5 & 6). For dispositional promotion focus the interaction with both organizational promotion (B= .28, SE= .15, p= .06, 90% CI= [.039 to .525]) and organizational prevention focus was marginally significant (B= -.33, SE= .18, p=

.07, 90% CI= [-.677 to -.032]). Dispositional promotion focus only had a marginally significant effect on ambidexterity in organizations with low perceived promotion focus (16th percentile, B= .30, p=.09), but the effect became significant in organizations with high perceived promotion focus (84th percentile, B= .77, p=.00). In contrast, for organizations with high perceived organizational prevention focus the effect became insignificant (84th percentile, B= .23, p=.25). For dispositional prevention focus, the interaction with both organizational prevention (B= -.59, SE= .21, p= .01, 95% CI= [-1.016 to -.172]) and organizational promotion focus was significant (B=-.49, SE= .18, p= .07, 90% CI= [-.843 to -.139]). Dispositional prevention focus had a positive effect on ambidexterity in organizations with a low perceived prevention focus (16th percentile, B= .74, p=.00) or a low perceived promotion focus (B= .82, p=.00), but it became insignificant in organizations with a high prevention (84th percentile, B= -.05, p=.85), or high promotion focus (84th percentile, B= .00, p=.99).

Insert Table 5 about here

Insert Table 6 about here

In summary, our predictions for the promotion system on creativity were confirmed. Individuals with a dispositional promotion focus were only able to engage in exploration for novelty if the perceived regulatory focus of the organization matched their own goal orientation. Specifically, for exploration to occur, perceived

organizational regulatory focus required a minimum promotion focus, while too high a prevention focus limited individual exploration. Our predictions for the moderating role of organizational regulatory focus on dispositional prevention focus system could only be partially confirmed. While a misfit as dispositional prevention with organizational promotion focus decreased exploitation, contrary to our prediction: fit as dispositional and organizational prevention focus *also* decreased the exploitation. Finally, we could not find support for our hypothesis that regulatory fit to either organizational focus for a simultaneous dispositional regulatory focus would enhance overall creativity. Our study built on perceptions of organizational prevention focus and may not accurately reflect the actual collective regulatory focus of an organization. Although speculative, the perception of prevention focus may reflect the experience of a vigilant and rigid organizational culture instead of a perceived goal orientation that guides vigilant behavior to fulfill duties at work. To address this limitation, in our second study we conceptualized and tested the effect of a more objective measure of organizational regulatory focus. In addition, we used a cross-sectional field study with an employee sample instead of an MTURK study.

STUDY 2

The purpose of Study 2 was to examine our hypotheses in an organizational setting and conduct an additional test to see if the relationships found for perceived organizational regulatory focus in Study 1 could be replicated for actual collective regulatory focus.

Data and Sample

We obtained data through a large-scale survey which was distributed and conducted by a professional service firm focusing on personal development. The firm sent invitations to CEOs and Chief Human Resources Officers of 14 organizations

who then invited their respective employees to participate. The organizations in the sample varied with respect to their industry (seven companies were professional services firms, three non-profit organizations, one technology, one media and communications, one healthcare and one social for-profit enterprise) and size (10 companies with 25 to 100 employees, one company with 100 to 200 employees, three companies that belonged to a holding with more than 500 employees). 10 companies invited all their employees in the survey, while four companies chose units that were operating independently of the main company.[20] From 639 respondents who were invited to the survey, 320 completed the survey (a 50% response rate, with a range across organizations consisting of 15% and 100%). Our final usable sample consisted of 308 employees as we excluded five cases where respondents gave the same answer across all the dependent and independent variables, and seven cases where respondents did not provide demographic information. Our response rate is similar or even higher to that of other recent studies in organizational behavior that use web-based surveys (Chowdhury and Fernando 2013; Jin et al., 2013; Spanjol, Tam & Tam, 2015). To reduce the possibility of common-method bias, the survey was held outside of each respective company intranet, and all employees across the participating companies were informed before and during the study that their responses were anonymous and confidential. The average age of the respondents was 37.7 years (SD = 9.3), 48% were female, and on average employees had been working for their respective companies for 4.8 years (SD = 1.5).

[20] The four companies comprised of three separate companies that were part of a holding, but that fully operated independently without interconnections of business operations, processes or management practices. The remaining company was a separate company of one parent company.

Measures

Exploration and Exploitation for facets of creativity. As in Study 2, we used Mom et al.'s (2018) employee ambidexterity measure. Due to survey length limitations proposed by the participating companies, we used a reduced measure consisting of five items each for exploration (alpha= .74) and exploitation (alpha= .80).[21]

Dispositional Regulatory Focus. Once again, we used Neubert´s (2008) Work Regulatory Focus scale, but due to survey length limitations, we had to select three items for each focus. Based on the results of Neubert et al.'s (2008) original study we selected items that had the highest factor loadings per focus, with no loadings onto the other dimension. However, the management team conducting the survey felt uncomfortable with one question which used a superlative ("I do *everything* I can to avoid loss at work") and thus we decided to include a corresponding item with the next highest factor loading. For prevention focus (alpha= .62) we included one item each to reflect security, oughts and losses: 1) "I concentrate on completing my work tasks correctly to increase my job security" (security); 2) "Fulfilling my work duties is very important to me" (oughts); 3) "I focus my attention on avoiding failure at work" (losses). For promotion focus (alpha= .64) we selected three items to reflect gains, achievements and ideals: 1) "I take chances at work to maximize my goals for advancement" (gains); 2) "If my job did not allow for advancement, I would likely find

[21] We excluded two items for exploration ("Activities of which the associated yields or costs are currently unclear" and "Activities that are not (yet) clearly existing company policy") and one item for exploitation ("Activities primarily focused on achieving short-term goals"), as they had the lowest factor loadings in Mom et al. 2008 original study of the scale. We also decided to drop an item for exploitation "Activities which clearly fit into existing company policy" as it corresponded to the dropped item for exploration "Activities that are not (yet) clearly existing company policy". In addition we slightly adapted the wording of the questionnaire to be more understandable for non-native English speakers, e.g. "Activities of which it is clear to you how to conduct them" was changed to "Activities where it is clear to you how to go about them", and "Activities requiring you to learn new skills or knowledge" to "Activities which meant you had to learn new skills or knowledge".

a new one" (achievement); 3) "I spend a great deal of time envisioning how to fulfill my aspirations (Ideals)."[22]

Collective (organizational) regulatory focus. Building on Hamstra (2014), we used an additive composition model in which organizational regulatory focus was calculated as the mean of employees' promotion or prevention focus scores (Chan, 1998; von Bonsdorff, Zhou, Wang, Vanhala & Rantanen, 2018). The composition model assumes that the similarity among individuals (e.g., in terms of personality) reflects a higher-level phenomenon, which can be represented by the collective-level mean (Kozlowski & Klein, 2000; Morgeson & Hofmann, 1999). Collective regulatory focus thus reflects the most likely values and strategic behaviors within the unit (Rietzschel, 2011). Regulatory fit was operationalized as the congruence (interaction) between the individual and the collective (organizational) regulatory focus. Such objective measures that aggregate employees' personal characteristics to reflect the organization (Kozlowski & Klein, 2000) can be used to reflect a perceived fit and can have larger effect sizes to predict individual work outcomes than the aggregated perception of organizational values. This type of collective measure is often used in person-organization studies (see meta-analysis by Kristof-Brown, Zimmermann & Johnson, 2005).

Controls. We controlled for gender and work tenure in years, as each was shown to impact creative or innovative behavior at work (Frosch, 2011; Sauermann & Cohen, 2010). Hence, we included 2 control variables as covariates in all subsequent analysis.

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[22] Although the reliability for the regulatory focus measures is low it is still above the limit of unacceptable values (see Devellis, 2003). We believe the comparatively low internal reliability is caused by the lower number of items (Hair, Black, Babin, Anderson & Tatham, 2006).

Insert Table 7 about here

Results and Discussion

Table 7 displays the means, standard deviations and the correlations between study variables. We used the same analytical strategy as in Study 1 to capture the influence of the moderator collective (organizational) regulatory focus from a regulatory fit perspective. First, we included an interaction term between individual and collective focus of the organization to capture functional fit. Second, we used the Johnson-Neyman technique (Johnson and Fay, 1950) to highlight significance regions (95% confidence intervals for each moderator value) in which promotion and prevention fit are significant (Roczniewska, Retowski & Higgins, 2018). In addition, we accounted for organizational effects by including a multicategory covariate, with each value corresponding to a unique company. Especially when the sample size at a higher lever is very low (e.g. 20 or less clusters), instead of using multilevel models, scholars can rely on single level models with bootstrapping techniques for accurate assessment of the sampling variability and include categorical variables for each higher level cluster (McNeish & Laura M. Stapleton, 2014). The variables were mean-centered. To isolate the effect of each regulatory focus, we controlled for the other respective focus (dispositional and collective organizational regulatory focus) in all analyses.

Insert Table 8 about here

Insert Table 9 about here

Dispositional Promotion Focus. Both dispositional promotion focus of the individual (B= .52, SE= .08, p= .00, 95% CI= [.357 to .683]) and collective promotion focus of the organization (B= .79, SE= .27, p= .00, 95% CI = [.253 to 1.334]) had a positive main effect on exploration (see table 8), while dispositional prevention focus had no main effect (B= -.02, SE= .01, p=.80, 95% CI= [-.214 to .165]). The covariates dispositional prevention focus, gender, work-tenure, and the categorical variable for each organization had no significant effect on exploration (p>.10), while collective prevention focus had a significant effect (B= -.98, SE= .27, p=.00, 95% CI= [-1.503 to -.449]). The interaction between dispositional and collective promotion focus had a marginal significant effect (B= .57, SE= .31, p= .06, 95% CI= [-.03 to 1.182]) and the plot (Figure 12) suggested that dispositional promotion focus had a stronger positive effect on exploration in promotion-focused organizations. The Johnson-Neyman procedure further highlighted (Figure 13) that the effect of dispositional promotion focus on exploration became insignificant for organizations with a mean collective promotion focus of less than -.41 (3.27 on a 1-5 scale). When collective organizational prevention focus was included as a moderator it had a negative significant main effect (B= -1.00, SE= .27, p= .00, 95% CI= [-1.521 to -.478]), while the main effect of dispositional promotion focus remained positive and significant (B= .52, SE= .08, p= .00, 95% CI= [.361 to .683])). Their interaction was significant (figure 14; B= .97, SE= .30, p= .00, 95% CI= [.369 to 1.569]) and the J-N point (figure 15) unexpectedly showed that the effect of individual dispositional promotion focus on exploration became insignificant for organizations with collective prevention focus of below -.299. The simple interaction plot suggested that collective prevention focus

of an organization decreased the positive effect of individual promotion focus on exploration for individuals with low dispositional promotion focus, while individuals with high dispositional promotion focus were unaffected. We therefore could only partially confirm Hypothesis 1, as promotion-focused individuals were only able to show exploration behavior in organizations with high collective promotion focus. In line with our hypothesis, collective prevention focus had decreased exploration for individuals with a low dispositional promotion focus, while it had no effect on the creative performance among individuals with a high promotion focus. In contrast with our hypothesis, however, individuals with an (average) promotion focus were only able explore solutions in organizations with a minimum degree of prevention focus.

Insert Figure 12 about here

Insert Figure 13 about here

Insert Figure 14 about here

Insert Figure 15 about here

Dispositional Prevention Focus. Dispositional prevention focus had a positive main effect on exploitation (see table 9; B= .58, SE= .08, p=.00; 95% CI= [.422 to .743]), while collective prevention focus of the organization had no main

effect (B= .11, SE= .23, p= .64, 95% CI= [-.341 to .552]). Its interaction with dispositional prevention focus had no significant effect (B= .02, SE= .25, p= .95, 95% CI= [-.471 to .504]). The Johnson-Neyman procedure highlighted no regions of significance in which the effect of the predictor dispositional prevention focus changed. The main effect of prevention focus on exploitation remained significant and positive, regardless of the level of the moderator collective prevention focus of the organization.[23] Next we investigated the moderating effect of collective promotion focus on the relationship between dispositional prevention focus on exploitation. Collective promotion focus had no significant main effect on exploitation (B= - .09, SE= .22, p= .70, 95% CI= [-.528 to .355]), while the main effect of dispositional prevention focus on exploitation remained significant and positive (B= .58, SE= .08, p=.00; 95% CI= [.425 to .741]). The interaction between dispositional prevention focus and collective promotion focus was not significant (B= .07, SE= .32, p= .84, 95% CI= [-.559 to .689]). The Johnson-Neyman procedure highlighted that regardless of the level of organizational promotion focus, the effect of prevention focus on exploitation remained significant and positive. Therefore, we did not find support for Hypothesis 2. Although individual dispositional prevention focus led to exploitation reflecting Useful creative behavior, neither organizational prevention nor promotion focus influenced the relationship.

Dispositional Simultaneous focus. As in Study 1, we grouped employees into the same four categories based on a mean-split of their dispositional regulatory focus. Using a regression model with multi-categorical independent variables to test

[23] In both analysis for the moderator collective promotion and prevention focus on the relationship between dispositional prevention focus and exploitation, the covariates gender, work tenure, dispositional promotion focus and collective promotion focus had no significant relationship with exploitation (p>.10). However, the multicategorical covariate for the organizations was significant (B= .03, SE= .01, p= .00).

our hypotheses (Hayes & Preacher, 2014), we regressed ambidexterity on each dummy variable representing dispositional regulatory foci groups, centered collective regulatory foci of the organization and their interaction. First, we included collective promotion focus of the organization as a moderator. Each group of dispositional regulatory focus had a positive main effect on ambidexterity: dispositional prevention focus, (B= .57, SE=.26, p= .03, 95% CI= [.057 to 1.089]), dispositional promotion focus (B= .63, SE= .25, p= .01, 95% CI= [.147 to 1.118]) and dispositional simultaneous focus (B=1.22, SE= .26, p= .00, 95% CI= [.711 to 1.723]). Organizational promotion focus had no significant main effect (B= .30, SE= .62, p= .63, 95% CI= [-.923 to 1.529]), but it interacted with the effect of a dispositional simultaneous focus on ambidexterity (figure 16; B= 2.08, SE=1.03, p= .04, 95% CI= [.053 to 4.115]).[24] The covariate collective prevention focus had a negative main effect on ambidexterity (B= -.73, SE= .37, p= .05, 95% CI= [-1.452 to .000]) while the other control variables: gender, work tenure and the multicategorical variable for organization were not significant (p>.10). The plot suggested that collective promotion focus increased the positive effect on ambidexterity for individuals with a simultaneous dispositional regulatory focus, reflecting novelty and usefulness. Specifically, in organizations with low collective promotion focus, an individual's dispositional simultaneous focus did not predict ambidexterity (16th percentile, B= .59, p=.16). Dispositional simultaneous focus, however, had a positive effect on ambidexterity in organizations with high collective promotion focus (84th percentile, B= 1.62, p=.00).

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[24] The interaction between organizational promotion focus and dispositional prevention focus (B=-.05, SE= .94, p= .96, 95% CI= [-1.888 to – 1.792]), and dispositional promotion focus were not significant focus (B=.23, SE= 1.01, p= .82, 95% CI= [-1.761 to 2.213]).

Insert Table 10 about here

Insert Figure 16 about here

Next, we investigated the moderating effect of collective organizational prevention focus. Collective organizational prevention focus had a main negative effect on ambidexterity (B=-1.79, SE= .59, p= .00, 95% CI= [-2.948 to - .633]), while dispositional prevention (B= .65, SE= .26, p= .01, 95% CI= [.142 to 1.156]), dispositional promotion (B= .75, SE= .25, p= .00, 95% CI= [.260 to 1.245]) and dispositional simultaneous focus of the individual (B= 1.23, SE= .26, p= .00, 95% CI= [.716 to 1.747]) had a positive main effect. None of the covariates had a significant effect on ambidexterity (p>.10). The interaction between collective prevention focus and individual prevention focus was not significant (B= .61, SE= .94, p= .52, 95% CI= [-1.249 to 2.464]), but collective prevention focus interacted significantly with dispositional promotion focus (B= 1.99, SE= .82, p= .02, 95% CI= [.378 to 3.593]) and dispositional simultaneous focus of the individual (B= 2.68, SE= 1.05, p= .01, 95% CI= [.620 to 4.738]). The interaction plot (figure 17) showed that collective prevention focuses increased ambidextrous behavior reflecting novelty and usefulness for individuals with a dispositional simultaneous regulatory focus. More specifically, individuals' dispositional simultaneous focus did not result into ambidexterity in organizations with low collective prevention focus (16^{th} percentile, B= .43, p=.34), but in organizations with a high collective prevention focus, a dispositional simultaneous focus had a positive effect on ambidexterity (84^{th} percentile, B= 1.98, p=.00). This was in line with Hypothesis 3, showing that

individuals with a simultaneous focus displayed more creative behavior reflecting both dimensions of novelty and usefulness in both promotion and prevention-focused organizations.

Insert Figure 17 about here

Study two replicated our previous findings of the beneficial effect of an individual and organizational promotion fit. It showed that for individuals to reap the benefits of their dispositional promotion focus on novelty, they had to work in organizations with a minimum degree of promotion orientation. Most interesting, however, are the findings about the effect of a collective organizational prevention focus. While individual and organization prevention fit did not impact usefulness, misfit between dispositional promotion focus and organizational prevention focus impacted novelty. For individuals with a low dispositional promotion focus, high organizational prevention focus limited explorative behavior as a proxy for novelty. At the same time, the positive effect of promotion focus on novelty was conditional on the level of collective prevention focus, as individuals did not show novelty in organizations with low collective prevention focus. This suggests that the interplay between organizational regulatory focus and individual goal orientation is highly complex and the effect on creativity depends on the relative fit between individual and organization. Finally, our findings for individuals with a simultaneous focus suggest that they can benefit from regulatory fit for both a collective promotion or prevention focus. Either collective organizational focus will boost overall creative behavior for individuals with high promotion and prevention orientations.

Post-Hoc Analysis

We ran, once again, several post-hoc analyses to investigate a potential moderating effect of collective organizational regulatory focus on the relationship between dispositional promotion or prevention focus on ambidexterity. For collective promotion focus the interaction to dispositional promotion (B= .79, SE= .43, p= .07, 90% CI= [.084 to 1.500]) was marginally significant and to dispositional prevention focus significant (B= 1.24, SE= .37, p= .00, 95% CI= [.402 to 2.076]). Dispositional promotion focus only had a marginally significant effect on ambidexterity in organizations with low collective promotion focus (16^{th} percentile, B= .27, p=.10), but the effect became significant in organizations with high collective promotion focus (84^{th} percentile, B= .66, p=.00). Similarly, individual's dispositional promotion focus had no effect on ambidexterity in organizations with low collective organizational prevention focus (16^{th} percentile, B= .13, p=.41), while the effect became significant in organization with high collective prevention focus (84^{th} percentile, B= .85, p=.00). For dispositional prevention focus, the interaction with both collective prevention (B= .24, SE= .42, p= .56, 95% CI= [-.578 to 1.065]) and collective promotion focus were not significant (B= .75, SE= .53, p= .16, 95% CI= [-.297 to 1.799]). Dispositional prevention focus had a positive effect on ambidexterity regardless of an organization's collective promotion or prevention focus.

Insert Table 11 about here

Insert Table 12 about here

DISCUSSION

In this study, we used regulatory focus (Higgins, 1997) and fit theory (Higgins, 2000) to explain how individual and organizational- level motivations influence employees' creative behavior. Although not hypothesized, we found that dispositional individual-level regulatory focus resulted in different degrees of creative behavior reflecting novelty or usefulness. More specifically, across studies we found that dispositional promotion focus had a positive effect on exploration which we used to assess novelty, and prevention focus had a positive effect on exploitation we used for usefulness. The research also showed that individuals who displayed a simultaneous high promotion and prevention focus were able to engage in creative behavior leading to both novelty and usefulness.

In addition, we found that collective organizational-level regulatory focus not only contributes directly to individual's creative behavior but also shapes it, by increasing or decreasing an employee's novelty or usefulness. Building on regulatory fit theory, our study showed that congruence in strategic inclination between individual and organizational goal pursuit influences individual idea generation. The study not only proposes that an organization with its collective regulatory focus can act as a relevant regulatory fit dimension but also that the degree of congruence is important in understanding the impact of contextual factors on employee creativity. The key thesis of this study is that just as unique individuals can select several paths to creative solutions, so too are they sensitive to their social setting and adapt their strategies accordingly. In line with our hypothesis across both studies an organizational promotion focus via regulatory fit increased novelty for individuals with a dispositional promotion focus. However, the results for dispositional prevention focus were inconsistent across the two studies. While in study 1 a perceived

organizational prevention focus decreased usefulness, in study 2 an actual collective prevention focus of the organization had no effect. Similar inconsistent effects were found for organizational promotion focus on the relationship between dispositional prevention focus and usefulness. Perceived organizational promotion focus decreased an individual's usefulness in study 1 while a collective promotion focus had no interacting effect on usefulness. Finally, our study showed that although perceived organizational regulatory focus does not impact overall creativity that is both novel and useful for individuals with a simultaneous focus, actual collective promotion and prevention focus boost overall creativity.

Our study thus contributes to the literature of both creativity and regulatory fit theory, as it offers an organizing framework to understand the underlying mechanisms of creative behavior in individuals and in organizations. This research shows that fit between individual and organizational levels of regulatory focus leads to specific types of creativity. In addition, we explored the possibility that regulatory focus can operate at the organizational level and influence individual work behaviors. To the best of our knowledge, tThis research, therefore, evidences congruence between individual chronic and organizational collective regulatory focus. It also shows that individuals, in their pursuit of creativity, are sensitive to the degree to which the organizational context fits their motivational orientation, facilitating new empirical research to investigate the underlying mechanisms of interacting factors at higher levels. Finally, our study uncovered that regulatory fit, to perceived or actual organizational regulatory focus, can result in producing the opposite effect on individual work performance to the one intended.

Limitations and future research

Despite significant contributions, there are clear limitations to this research. First, across both studies, we assessed creativity with working individuals in different organizations across diverse industries, strengthening our argument that our findings extend to the workplace as a whole and are generalizable across settings. However, common method bias is a risk with the single informant design, whereby participants assessed their own creativity as well as their own perceptions of the independent and moderating variables. In study 1, we did use a time-lag between the assessment of chronic individual regulatory focus and the other measures to mitigate some of the challenges with this design. However, study 2 is cross-sectional and we suggest that future research use triangulating data from various sources (peers, supervisor, etc.) to assess participants' creativity to provide a more robust assessment of the dependent variable. In addition, another standard approach in creativity studies is to seek creativity assessments by "experts" and then measure creativity as the consensual agreement between judges (Amabile, 1982; Baer & McKool, 2009). Although an expert or peer/ superior assessment is ideal, self-report measures on creativity have been shown to accurately reflect employee´s actual creative ability and correlate strongly with ratings of managers (Shalley, 2009). We encourage future research, however, to explore the effect of fit between individual and organizational regulatory focus on workplace creativity behavior using objective creativity assessments.

Second, our conceptualization of organizational regulatory focus may also face limitations. In our first study, we relied on ratings of perceived regulatory focus of the workplace by individuals via a referent shift measure, which may not be an accurate reflection of the collective focus of the organization. Due to the design

limitation of using a MTURK sample, it was not possible to assess the degree of agreement among members of a particular organization and we could not investigate if the perceived regulatory focus would be shared among members. Therefore, the measure may have a high subjective bias, especially as regulatory focus may capture socially desired behaviors (Donaldson & Grant-Vallone, 2002). In addition, although the internal reliability of the perceived organizational regulatory focus was acceptable (Hair et al., 2006; Reed et al., 2006), it was lower than expected. We hence used more objective measures in our second study by relying on actual collective regulatory focus, which we conceptualized as the aggregated foci of employees within an organization. Due to survey length limitations, in study 2 we had to rely on a shortened form of the Work Regulatory Focus scale (Neubert et al. 2008), which may explain the low, but acceptable, internal reliability (Hair et al. 2006). However, other studies that applied regulatory focus scales in cross-industry surveys have found similar internal reliabilities (e.g. Ahmadi et al. 2017; Carmona et al., 2008; Kammerlander et al. 2015; Sassenberg et al., 2012) Therefore we encourage scholars to explore ways to improve the internal reliability of shortened regulatory focus measures that can be used in organizational field settings.

Third, although our findings of the direct effect of organizational regulatory focus on individual creativity were similar across the studies, the different interaction effect of individual regulatory focus and perceived versus actual organizational regulatory focus suggests individuals may be more negatively influenced to organizational context that they perceive to emphasize security, risk minimization, and vigilant behaviors. There is an opportunity for future research to empirically assess whether the findings vary for different measurements of collective organizational regulatory focus. Such studies could operationalize different measures for regulatory fit -

perceived, actual, or objective and shared regulatory focus via a referent shift models – and uncover the distinct effect each has on employee outcomes.

In addition, our study did not have the scope to incorporate the idea generation processes that underlie facets of creativity. Past research on individual creativity nonetheless has identified two idea generation processes that facilitate the degree solutions are novel and useful (Sulivan & Ford, 2010; Zhou et al., 2017). In such Dual Process Models of Creativity, two distinct cognitive paths, flexibility and persistence, contribute to creativity (de Dreu et al., 2008; Nijstad et al., 2010). Flexibility is characterized by divergent thinking, with individuals easily switching between perspectives or alternatives. They explore broad knowledge categories for novel solutions, which are associated with facets of originality (Boot, Baas, van Gaal & De Dreu, 2017). The persistence pathway, on the other hand, is characterized by convergent thinking, with individuals focusing on a systematic and incremental search process. Individuals exploit and bridge between existing ideas to generate specific or useful solutions (Nijstad et al., 2010). While individuals can use one or the other pathway to generate ideas, recent research suggests balancing flexibility and persistence can allow high levels of both novelty and usefulness (Berg, 2014; Miron-Spektor & Beenen, 2015). The idea generation path that dominates seems to depend on individual and contextual factors (Baas, Roskes, Sligte, Bernard, Nijstad & de Dreu, 2013). We therefore suggest that future conceptual and empirical work explores how individual and contextual factors impact the paths underlying idea generation. For instance, future studies could use regulatory fit theory to explain boundary conditions that enhance, limit, or change cognitive flexibility or persistence.

Future research could also theorize how and when regulatory focus emerges across different levels. In this study, we did not investigate the simultaneous effect of

organizational promotion and prevention focus (but disentangled their effect by controlling for one or the other focus). Future studies could investigate if and how such collective foci in tandem influence work outcomes of individuals. For example, a team or organization most likely will comprise of members with different regulatory foci (van Knippenberg et al., 2017; Johnson et al., 2015). If an organizational collective regulatory focus does not emerge, it may be that the organization is comprised of collective regulatory foci at the team/ sub-groups level. For such divergent collectives, regulatory fit theory can also help to explain how the context interacts with the person's creative process. In addition, regulatory fit theory can borrow concepts form diversity theory for a more realistic theory building bridges between process within the team or organization, and its effect on the individual (van Knippenberg & Mell, 2016). Empirical research here would need to disentangle systematically and longitudinally the short-term and long-term effects of fit or misfit on creative outcomes.

While this research examined regulatory fit between individual and organizational regulatory focus, we encourage future research to investigate the effect of regulatory fit between individual regulatory focus and other contextual variables on creative behavior. For example, future studies could investigate how and when regulatory fit between followers and leaders impact creative behavior. Further, future research could also investigate if different types of leadership may influence the creative process. For example, building on Mainemalis, Kark & Epitropaki's (2017) conceptual framework of three manifestations of creative leadership (Facilitating, Directing, and Integrating) which differ in the creative contribution of leaders and followers, it may be that the creative leadership style differs in its effectiveness based on regulatory fit to the employee.

Finally, this research suggests practical implications for organizations to consider. The finding that employees engage in distinct creative behaviors based on their regulatory focus orientations, and that this is influenced by the motivational orientation of the organization, underscores the importance of regulatory focus within both individuals and organizations in fostering creativity. To optimize the alignment of motivational preference with work-task, managers could select employees based on their regulatory focus and assign them to different projects based on the creative requirements. In addition, across both of our studies, we showed how the organizational context directly impacts an individual's creative behavior. This implies that employee creativity can be strategically managed by influencing the organization's shared behaviors, priorities, and values. For example, certain tasks might be approached with either a promotion or prevention focus, such as jobs requiring high levels of customer service and communication, which in turn would affect an employee's ability to deploy distinct forms of creativity. An organizational context emphasizing vigilant behavior and security goals would encourage employees to engage in creative behavior for useful solutions. If the organization emphasizes eager behavior and maximization goals, employees would be more likely to engage in creative behavior for novelty. Nonetheless, our study showed that managers should be aware how shared motivational orientation in an organization impacts employees uniquely. Based on interplay with the unique motivation orientation of the employee, the intended effect on creativity will vary - and even at times be opposite to the one desired.

CONCLUSION

Employee creativity has been established as an important resource for many companies to remain successful in ever-changing times. This research suggests that

the interplay between the individual and the organizational context drives creative idea generation for novel and useful solutions. We propose that regulatory focus and regulatory fit theory can offer new insights on this interplay and provide a more nuanced view on how employees generate ideas and solutions in their workplace. We hope that future research will build on our findings to further explore how contextual factors influence an individual´s workplace creativity.

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TABLES AND FIGURES

Table 1

Descriptive Statistics and Correlation Matrix (Study 1)

	Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
1	Exploration	4.27	1.09	(.85)										
2	Exploitation	5.11	.91	.410**	(.83)									
3	Promotion Focus	3.66	.78	.472**	.144*	(.89)								
4	Prevention Focus	4.18	.61	.161*	.342**	.169*	(.86)							
5	Organizational Promotion Focus	3.57	.84	.456**	.192**	.495**	.228**	(.65)						
6	Organizational Prevention Focus	3.97	.69	.115†	.330**	.178**	.523**	.261**	(.63)					
7	Age	37.21	10.95	.052	-.023	-.126†	-.092	-.051	-.126†	-				
8	Gender	1.47	.50	.122†	-.070	.133*	-.141*	.072	-.076	-.134*	-			
9	Education	4.69	1.20	-.035	-.091	-.038	-.057	-.024	.056	.037	-.018	-		
10	Ambidexterity	9.38	1.68	.869**	.808**	.383**	.290**	.399**	.254**	.021	.041	-.072	-	
11	Extraversion	2.85	1.16	.201**	.043	.227**	-.014	.154*	-.018	.129†	.011	-.024	.153*	(.65)

Note: Individual N = 219; The reliability of applicable measures are displayed on the diagonal of the matrix (in parentheses). Gender (1 = *female*; 2 = *male*). Education (1 = less than high school, 2 = High school, 3 = incomplete college, 4 = Associate's degree, 5 = Bachelor's degree, 6 = Master's degree, 7 = Doctor´s degree). † p <.10 (two-tailed); *p <.05 (two-tailed); **p <.01 (two-tailed).

Table 2: Regression analysis of individual dispositional promotion focus, perceived organizational regulatory focus, and their interaction on exploration.

	Exploration reflecting novelty									
Predictor	***B***	**SE**	**p**	**LLCI**	**ULCI**	***B***	**SE**	**p**	**LLCI**	**ULCI**
Intercept	2.90	.66	.00	1.601	4.206	1.36	.69	.05	.218	2.507
Age	.21	.11	.06	-.011	.430	.22	.11	.05	.039	.408
Gender	.19	.13	.14	-.061	.443	.18	.13	.15	-.026	.395
Extraversion	.06	.06	.27	-.049	.172	.06	.06	.30	-.034	.151
Dispositional Promotion	.47	.10	.00	.276	.662	.43	.09	.00	.270	.582
Dispositional Prevention	.15	.12	.20	-.083	.392	.15	.12	.21	-.047	.350
Organizational Promotion	.37	.09	.00	.197	.542	.37	.09	.00	.229	.518
Organizational Prevention	-.07	.11	.54	-.278	.146	-.08	.11	.48	-.254	.102
Interactions										
Dispositional Promotion x Organizational Promotion	.13	.09	.17	-.053	.309					
Dispositional Promotion x						-.19	.11	.10	-.376	.000

Organizational Prevention		
R^2	.32 (p=.00)	.32 (p=.00)

Table 3: Regression analysis of individual dispositional prevention focus, perceived organizational regulatory focus, and their interaction on exploitation.

Exploitation reflecting usefulness

Predictor	***B***	**SE**	**p**	**LLCI**	**ULCI**	***B***	**SE**	**p**	**LLCI**	**ULCI**
Intercept	4.59	.44	.00	3.722	5.454	3.76	.60	.00	2.567	4.945
Age	.28	.11	.02	.051	.501	.01	.10	.92	-.190	.211
Gender	-.07	.12	.58	-.299	.167	-.05	.12	.67	-.277	.179
Extraversion	.02	.05	.66	-.079	.125	.03	.05	.52	-.067	.133
Dispositional Promotion	.03	.09	.70	-.139	.206	.06	.08	.42	-.092	.221
Dispositional Prevention	.28	.11	.02	.051	.501	.25	.11	.03	.030	.468
Organizational Promotion	.10	.08	.22	-.061	.261	.06	.08	.42	-.092	.221
Organizational Prevention	.24	.10	.02	.042	.437	.30	.10	.00	.108	.496
Interactions										
Dispositional Prevention x Organizational Prevention	-.24	.12	.06	-.485	.007					
Dispositional Prevention x Organizational Promotion						-.37	.10	.00	-.567	-.166
R^2			.17 (p=.00)					.21 (p=.00)		

Table 4: Regression analysis of dominant individual dispositional regulatory focus, perceived organizational regulatory focus, and their interaction on ambidexterity

Ambidexterity reflecting novelty & usefulness

Predictor	***B***	**SE**	**p**	**LLCI**	**ULCI**	***B***	**SE**	**p**	**LLCI**	**ULCI**

Intercept	6.24	.95	.00	4.36	8.11	5.72	.72	.00	4.309	7.139
Age	.21	.18	.26	-.154	.571	.27	.18	.14	-.085	.618
Gender	.15	.21	.48	-.265	.564	.10	.21	.63	-.305	.504
Extraversion	.11	.09	.22	-.067	.291	.11	.09	.21	-.063	.283
Disp. Promotion Group	.76	.33	.02	.118	1.402	.48	.34	.16	-.183	1.142
Disp. Prevention Group	.50	.33	.14	-.157	1.156	.37	.31	.23	-.234	.981
Disp. Simultaneous Group	.81	.34	.02	.139	1.477	.73	.33	.03	.087	1.373
Organizational Promotion	.73	.25	.00	.241	1.225	.65	.13	.00	.387	.915
Organizational Prevention	.40	.17	.02	.063	.735	1.33	.30	.00	.745	1.914
Interactions										
Disp. Promotion Group x Organizational Promotion	.17	.38	.66	-.578	.917					
Disp. Prevention Group x Organizational Promotion	-.55	.36	.13	-1.255	.157					
Disp. Simultaneous Group x Organizational Promotion	-.27	.38	.47	-1.022	.476					
Disp. Promotion Group x Organizational Prevention						-1.03	.47	.03	-1.951	-.115
Disp. Prevention Group x Organizational Prevention						-1.37	.43	.00	-2.212	-.519
Disp. Simultaneous Group x Organizational Prevention						-1.74	.44	.00	-2.608	-.879
R^2			.25 (p=.00)					.30 (p=.00)		

Table 5: Post-Hoc regression analysis of individual dispositional promotion focus, perceived organizational regulatory focus, and their interaction on ambidexterity

Ambidexterity reflecting novelty & usefulness

Predictor	*B*	SE	p	LLCI	ULCI	*B*	SE	p	LLCI	ULCI
Intercept	5.58	1.06	.00	3.831	7.335	4.78	1.11	.00	2.933	6.617
Age	.24	.18	.18	-.054	.539	.27	.18	.14	-.029	.566
Gender	.14	.21	.49	-.197	.482	.13	.21	.54	-.212	.466
Extraversion	.08	.09	.39	-.072	.225	.07	.09	.41	-.075	.223
Dispositional Promotion	.56	.16	.00	.297	.815	.46	.15	.00	.214	.716
Dispositional Prevention	.48	.19	.01	.157	.796	.47	.19	.02	.153	.791
Organizational Promotion	.45	.14	.00	.221	.685	.46	.14	.00	.227	.691
Organizational Prevention	.18	.17	.30	-.105	.467	.17	.17	.34	-.121	.453
Interactions										
Dispositional Promotion x Organizational Promotion	.28	.15	.06	.039	.525					
Dispositional Promotion x Organizational Prevention						-.33	.18	.07	-.637	-.032

27

Note: 90% CIs

27

Note: 90% CIs

Table 6: Post-Hoc regression analysis of individual dispositional prevention focus, perceived organizational regulatory focus, and their interaction on ambidexterity

Ambidexterity reflecting novelty & usefulness

Predictor	*B*	SE	p	LLCI	ULCI	*B*	SE	p	LLCI	ULCI
Intercept	4.99	.75	.00	3.505	6.480	5.69	1.06	.00	3.600	7.775
Age	.29	.18	.11	-.063	.641	.21	.18	.24	-.139	.564
Gender	.11	.20	.60	-.295	.507	.14	.20	.50	-.265	.537
Extraversion	.09	.09	.31	-.084	.266	.10	.09	.25	-.072	.279
Dispositional Promotion	.45	.15	.00	.155	.748	.47	.15	.00	.178	.770

Dispositional Prevention	.36	.20	.07	-.026	.747	.38	.19	.05	-.005	.763
Organizational Promotion	.50	.14	.00	.220	.773	.43	.14	.00	.151	.700
Organizational Prevention	.16	.17	.36	-.181	.496	.21	.18	.24	-.139	.564
Interactions										
Dispositional Prevention x Organizational Prevention	-.59	.21	.01	-1.016	-.172					
Dispositional Prevention x Organizational Promotion						-.49	.18	.01	-.843	-.139
			.28 (p=.00)					.28 (p=.00)		

Table 7

Descriptive Statistics and Correlation Matrix (Study 2)

	Variable	M	SD	1	2	3	4	5	6	7	8	9
1	Exploration	5.03	1.20	(.74)								
2	Exploitation	5.26	.99	.083	(.80)							
3	Promotion Focus	3.68	.83	.354**	.017	(.64)						
4	Prevention Focus	4.01	.71	-.043	.407**	.128*	(.62)					
5	Organizational Promotion Focus	3.68	.28	.164**	.023	.344**	.141*	-				
6	Organizational Prevention Focus	4.01	.28	-.148**	.140*	.123*	.394**	.357**	-			
7	Work tenure	3.50	1.72	-.142*	-.001	-.149*	.006	.004	-.029	-		
8	Gender	1.51	.57	-.030	-.097†	.054	-.095†	.083	-.022	.038	-	
9	Ambidexterity	10.29	1.62	-	-	.273**	.217**	.136*	.077	-.067	-.82	-

Note: Individual N = 308; Organizations N = 14. The reliability of applicable measures are displayed on the diagonal of the matrix (in parentheses). Gender (1 = *female*; 2 = *male*).
Work tenure (1 = 0-1years, 2 = 1-2 years, 3 = 2-4 years, 4 = 5-10 years, 5 = 5-10 years, 6 = more than 15 years). † *p* <.10 (two-tailed); **p* <.05 (two-tailed); ***p* <.01 (two-tailed).

Table 8: Regression analysis of individual dispositional promotion focus, collective organizational regulatory focus, and their interaction on exploration.

	Exploration reflecting novelty									
Predictor	***B***	**SE**	**p**	**LLCI**	**ULCI**	***B***	**SE**	**p**	**LLCI**	**ULCI**
Intercept	9.16	1.02	.00	7.146	11.171	2.76	1.12	.01	.554	4.958
Gender	-.10	.11	.36	-.325	.119	-.11	.11	.33	-.328	.110
Work Tenure	.01	.04	.86	-.067	.081	.01	.04	.82	-.065	.081
Dispositional Promotion	.52	.08	.00	.357	.683	.52	.08	.00	.362	.683
Dispositional Prevention	-.02	.10	.80	-.214	.166	-.05	.10	.63	-.234	.143
Organizational Promotion	.79	.27	.00	.253	1.335	.70	.27	.01	.172	1.225
Organizational Prevention	-.98	.27	.00	-1.503	-.449	-1.00	.27	.00	-1.521	-.478
Organization identifier	.00	.01	.77	-.029	.022	.00	.01	.75	-.029	.021
Interactions										
Dispositional Promotion x Organizational Promotion	.57	.31	.06	-.033	1.182					
Dispositional Promotion x Organizational Prevention						.97	.30	.00	.369	1.569
R^2	.20 (p=.00)					.21 (p=.00)				

Table 9: Regression analysis of individual dispositional prevention focus, collective organizational regulatory focus, and their interaction on exploitation.

	Exploration reflecting usefulness									
Predictor	***B***	**SE**	**p**	**LLCI**	**ULCI**	***B***	**SE**	**p**	**LLCI**	**ULCI**
Intercept	5.46	.83	.00	3.827	7.101	4.73	.95	.00	2.865	6.599
Gender	-.04	.09	.65	-.226	.141	-.04	.09	.66	-.226	.142
Work Tenure	-.01	.03	.80	-.070	.054	-.01	.03	.79	-.069	.053
Dispositional Promotion	-.02	.07	.74	-.158	.112	-.09	.22	.70	-.528	.355
Dispositional Prevention	.58	.08	.00	.423	.744	.58	.08	.00	.425	.741
Organizational Promotion	-.09	.23	.69	-.539	.359	-.09	.22	.70	-.528	.355
Organizational Prevention	.11	.23	.64	-.341	.552	.10	.22	.66	-.341	.537
Organization identifier	.03	.01	.00	.012	.053	.03	.01	.00	.012	.054
Interactions										
Dispositional Prevention x Organizational Prevention	.02	.25	.95	-.471	.504					
Dispositional Prevention x Organizational Promotion						.07	.32	.84	-.559	.689
R^2	.20 (p=.00)					.20 (p=.00)				

Table 10: Regression analysis of dominant individual dispositional regulatory focus, collective organizational regulatory focus, and their interaction on ambidexterity

	Ambidexterity reflecting novelty & usefulness									
Predictor	***B***	**SE**	**p**	**LLCI**	**ULCI**	***B***	**SE**	**p**	**LLCI**	**ULCI**
Intercept	12.50	1.48	.00	9.577	15.416	7.34	1.42	.00	4.541	10.132
Gender	-.11	.16	.48	-.431	.203	-.11	.16	.50	-.422	.206

Work Tenure	-.01	.05	.89	-.112	.098	-.11	.16	.50	-.422	.206
Disp. Promotion Group	.63	.25	.01	.147	1.118	.75	.25	.00	.261	1.245
Disp. Prevention Group	.57	.26	.03	.057	1.089	.65	.26	.01	.142	1.156
Disp. Simultaneous Group	1.22	.26	.00	.711	1.723	1.23	.26	.00	.717	1.747
Organizational Promotion	.30	.62	.63	-.923	1.529	.60	.38	.11	-.142	1.343
Organizational Prevention	-.73	.37	.05	-1.452	-.001	-1.79	.59	.00	-2.948	-.633
Organization identifier	.03	.02	.11	-.007	.065	.02	.02	.17	-.011	.059
Interactions										
Disp. Promotion Group x Organizational Promotion	.23	1.01	.82	-1.761	2.213	1.99	.82	.02	.378	3.593
Disp. Prevention Group x Organizational Promotion	-.05	.94	.96	-1.888	1.792	.61	.94	.52	-1.249	2.464
Disp. Simultaneous Group x Organizational Promotion	2.08	1.03	.04	.053	4.115	2.68	1.05	.01	.620	4.738
R^2	.15 (p=.00)					.14 (p=.00)				

Table 11: Post-Hoc regression analysis of individual dispositional promotion focus, perceived organizational regulatory focus, and their interaction on ambidexterity

	Ambidexterity reflecting novelty & usefulness									
Predictor	***B***	**SE**	**p**	**LLCI**	**ULCI**	***B***	**SE**	**p**	**LLCI**	**ULCI**
Intercept	11.43	1.42	.00	9.081	13.773	5.78	1.56	.00	2.714	8.850
Gender	-.14	.16	.38	-.398	.119	-.15	.16	.34	-.454	.157
Work Tenure	.00	.05	.98	-.085	.088	.00	.05	.95	-.099	.105
Dispositional Promotion	.50	.12	.00	.314	.694	.50	.11	.00	.281	.729
Dispositional Prevention	.56	.13	.00	.334	.777	.53	.13	.00	.266	.791
Organizational Promotion	.74	.38	.05	.111	1.371	.61	.37	.10	-.123	1.343
Organizational Prevention	-.88	.37	.02	-1.494	-.266	-.91	.37	.01	-1.634	-.181

Organization identifier	.03	.02	.09	.001	.061	.03	.02	.09	-.005	.064
Interactions										
Dispositional Promotion x Organizational Promotion	.79	.43	.07	.084	1.500					
Dispositional Promotion x Organizational Prevention						1.24	.42	.00	.403	2.076
R^2	.16 (p=.00)					.18 (p=.00)				
	Note: 90% CI					*Note:* 95% CI				

Table 12: Post-Hoc regression analysis of individual dispositional prevention focus, perceived organizational regulatory focus, and their interaction on ambidexterity

	Ambidexterity reflecting novelty & usefulness									
Predictor	***B***	**SE**	**p**	**LLCI**	**ULCI**	***B***	**SE**	**p**	**LLCI**	**ULCI**
Intercept	6.41	1.40	.00	3.653	9.164	12.16	1.59	.00	9.021	15.291
Gender	-.16	.16	.30	-.471	.148	-.15	.16	.34	-.458	.159
Work Tenure	.00	.05	.93	-.109	.099	-.01	.05	.87	-.111	.094
Dispositional Promotion	.48	.12	.00	.249	.702	.47	.11	.00	.246	.698
Dispositional Prevention	.58	.14	.00	.311	.851	.57	.13	.00	.309	.838
Organizational Promotion	.58	.38	.13	-.180	1.331	.62	.38	.10	-.120	1.363
Organizational Prevention	-.81	.38	.03	-1.562	-.059	-.91	.37	.02	-1.645	-.171
Organization identifier	.02	.02	.20	-.012	.057	.03	.02	.13	-.008	.062
Interactions										
Dispositional Prevention x Organizational Prevention	.24	.42	.56	-.578	1.065					
Dispositional Prevention x Organizational Promotion						.75	.53	.16	-.297	1.799
R^2	.15 (p=.00)					.16 (p=.00)				

FIGURE 1

Conceptual Framework

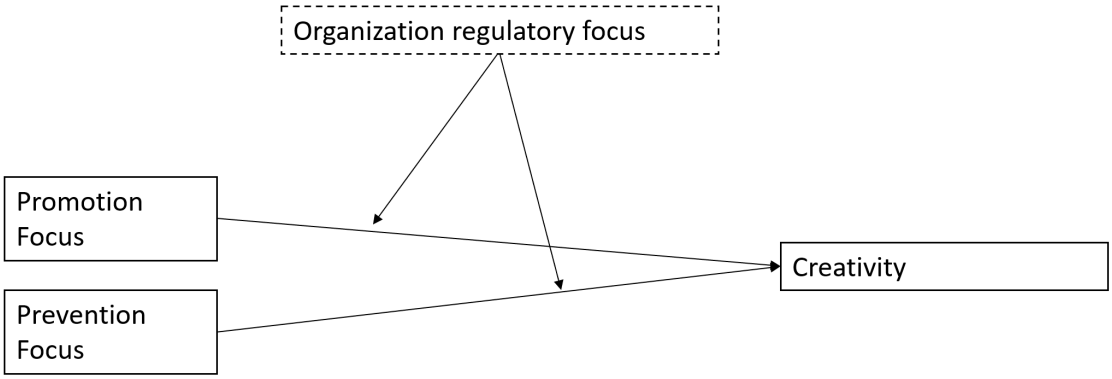


FIGURE 2

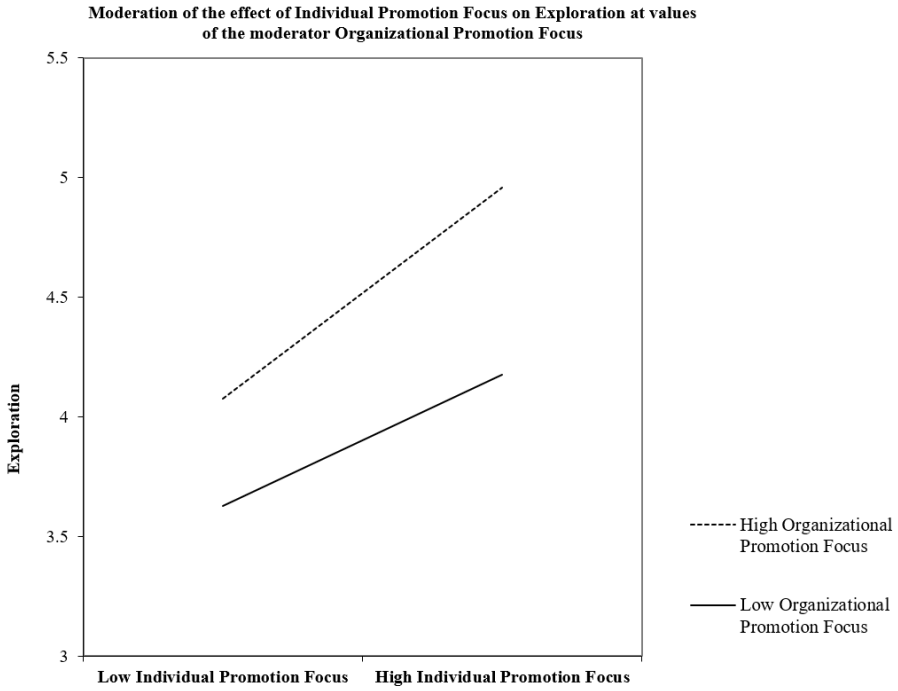


FIGURE 3

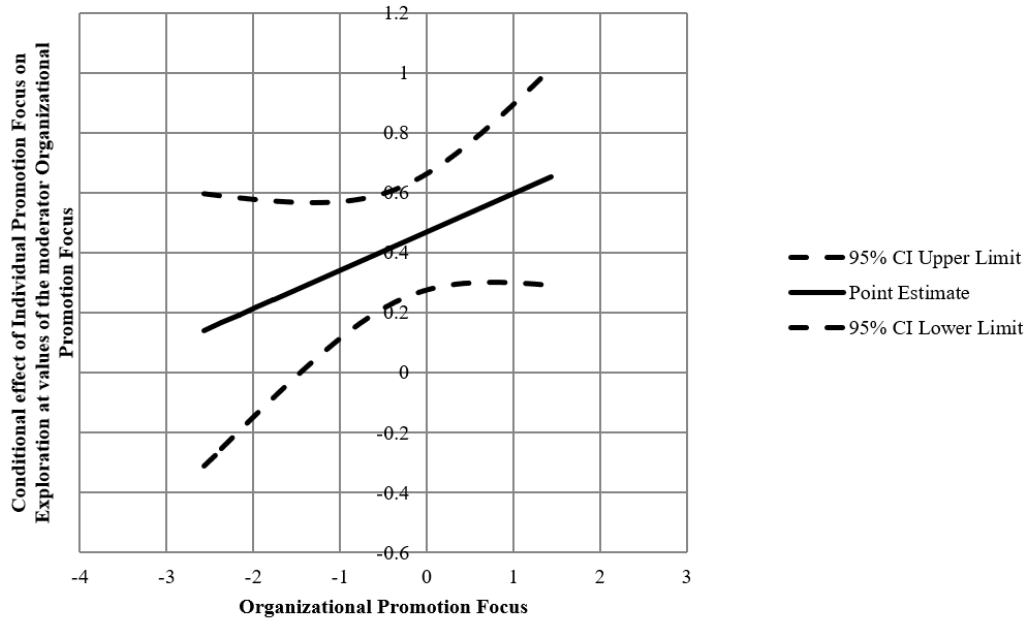


FIGURE 4

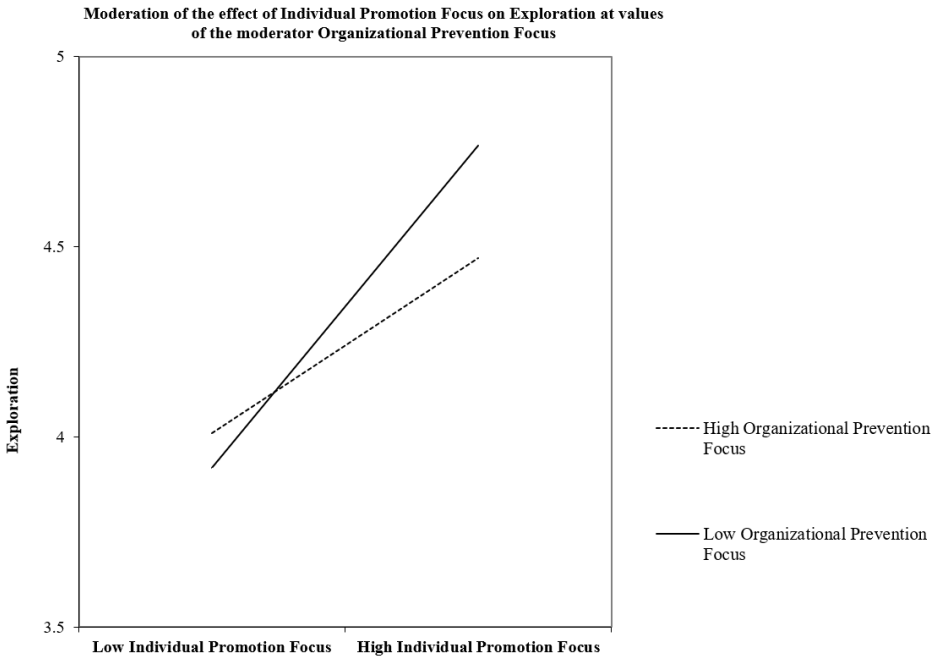


FIGURE 5

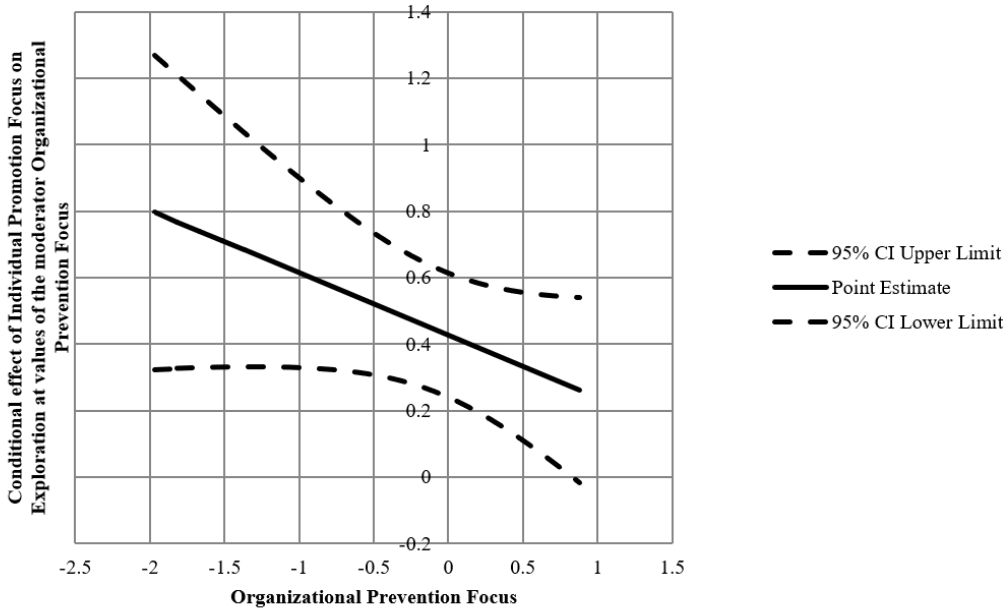


FIGURE 6

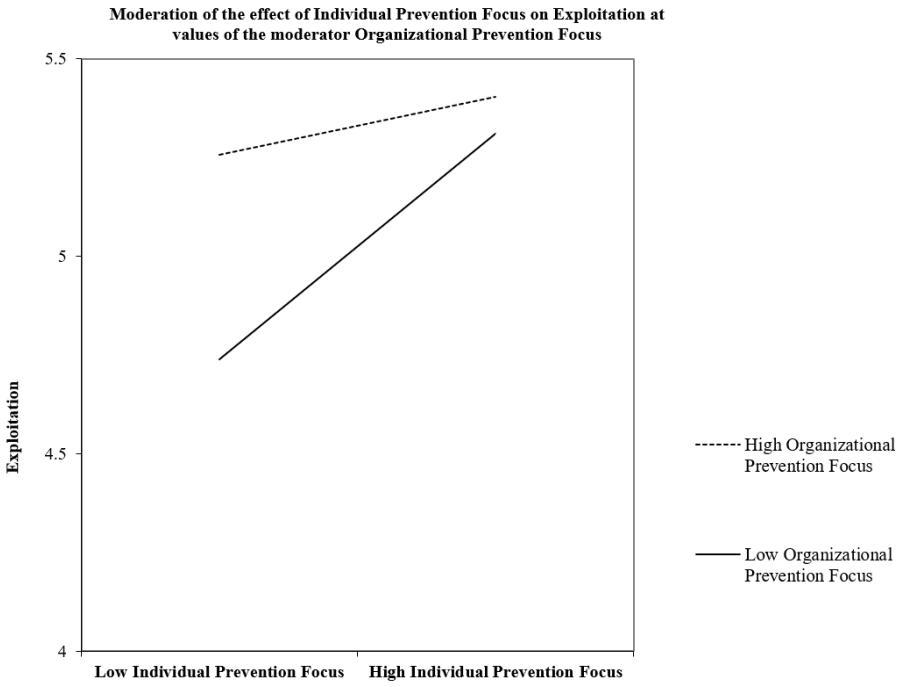


FIGURE 7

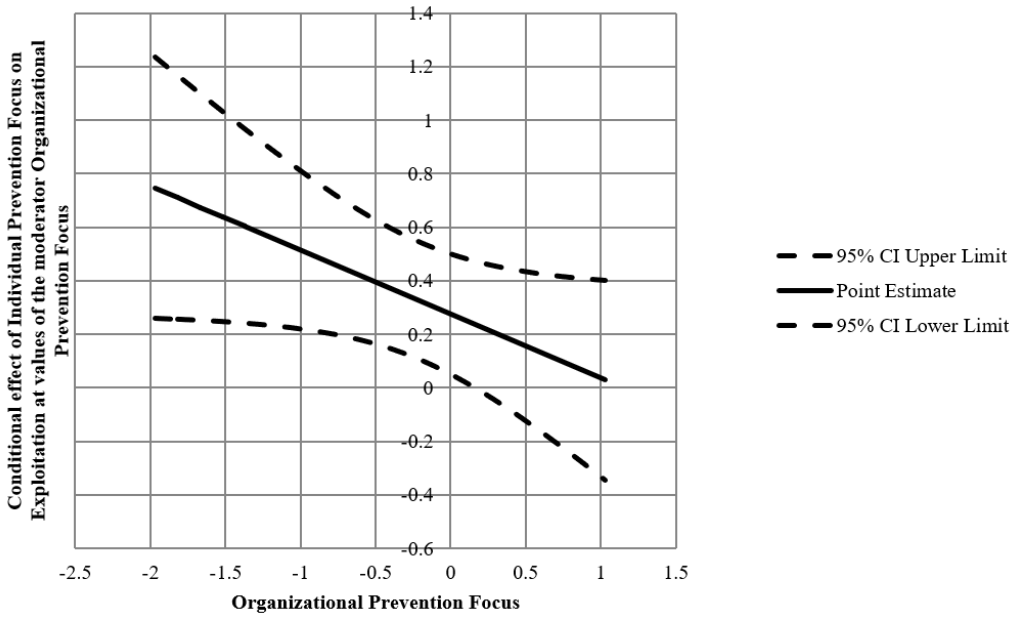


FIGURE 8

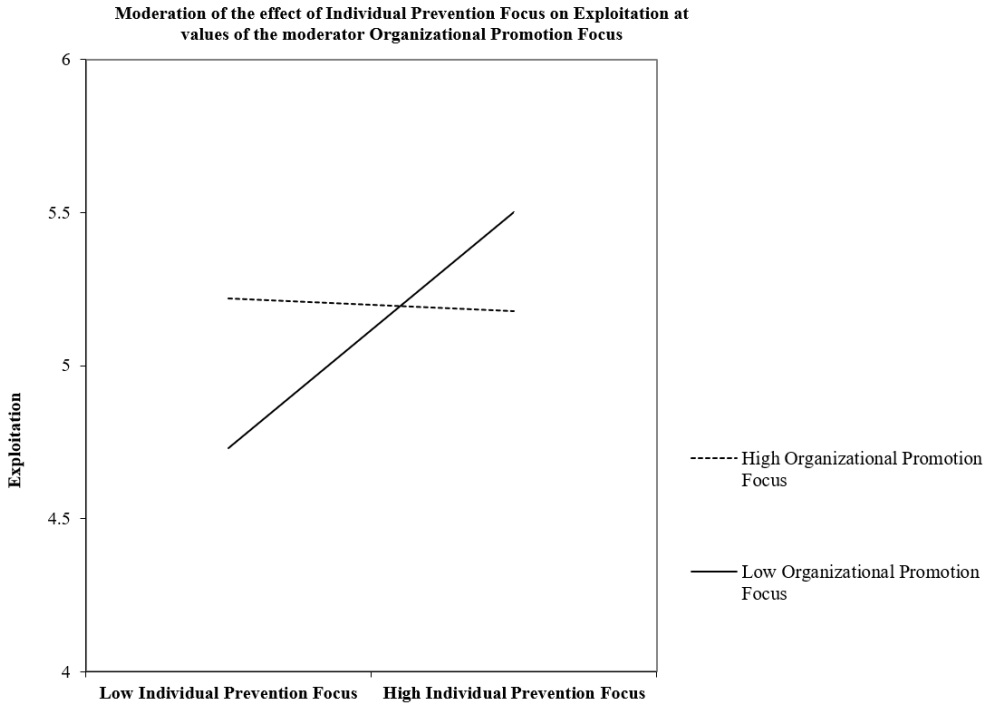


FIGURE 9

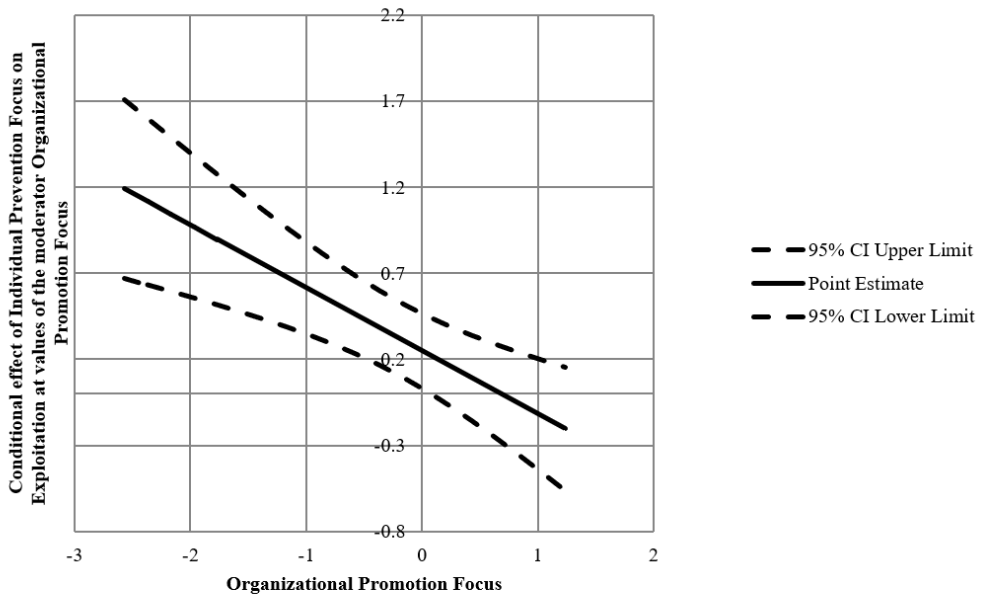


FIGURE 10

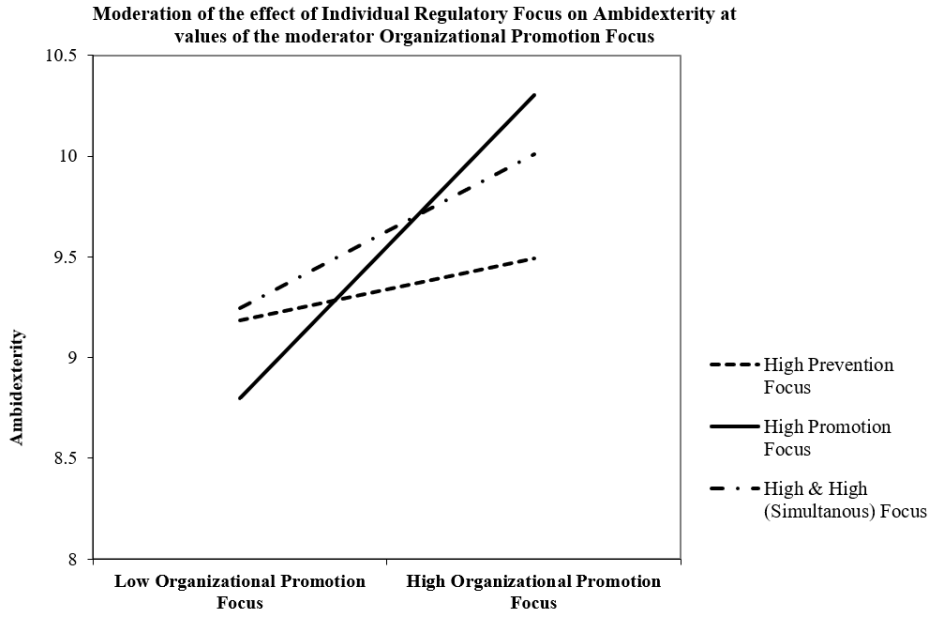


FIGURE 11

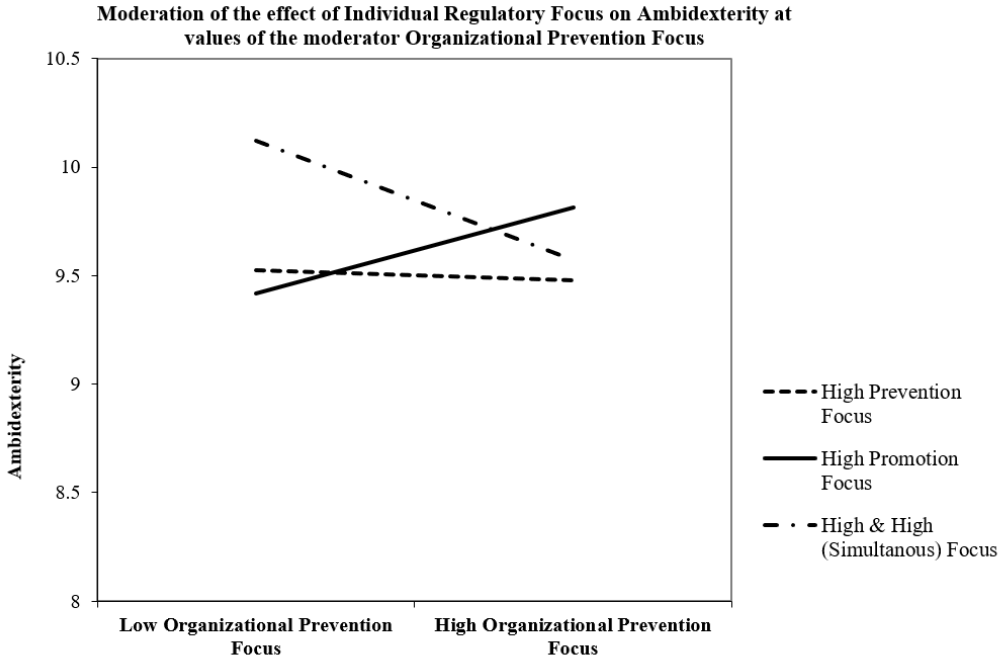


FIGURE 12

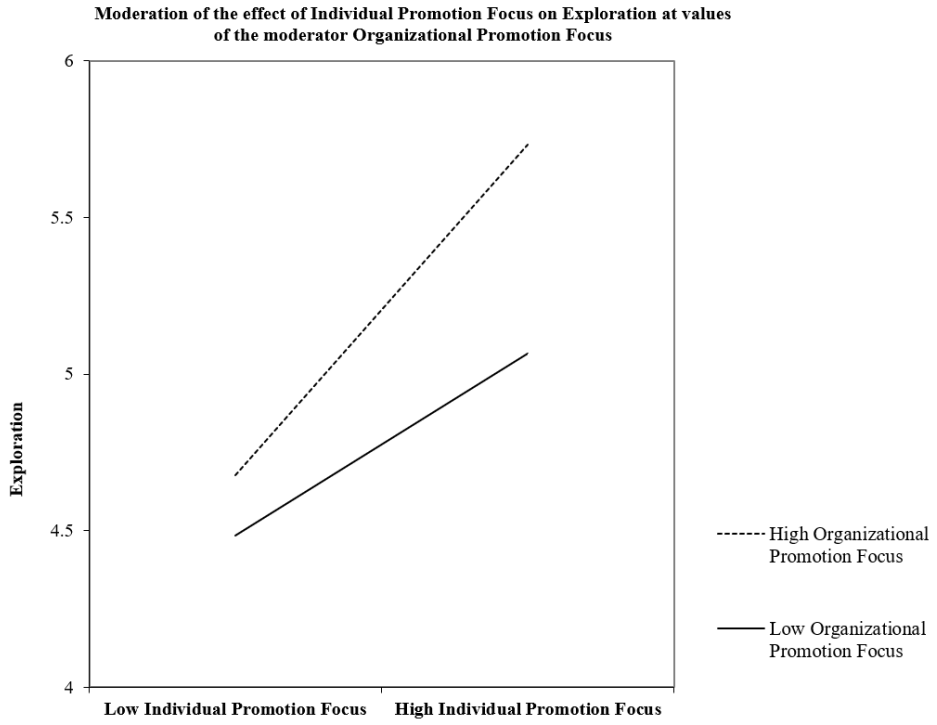


FIGURE 13

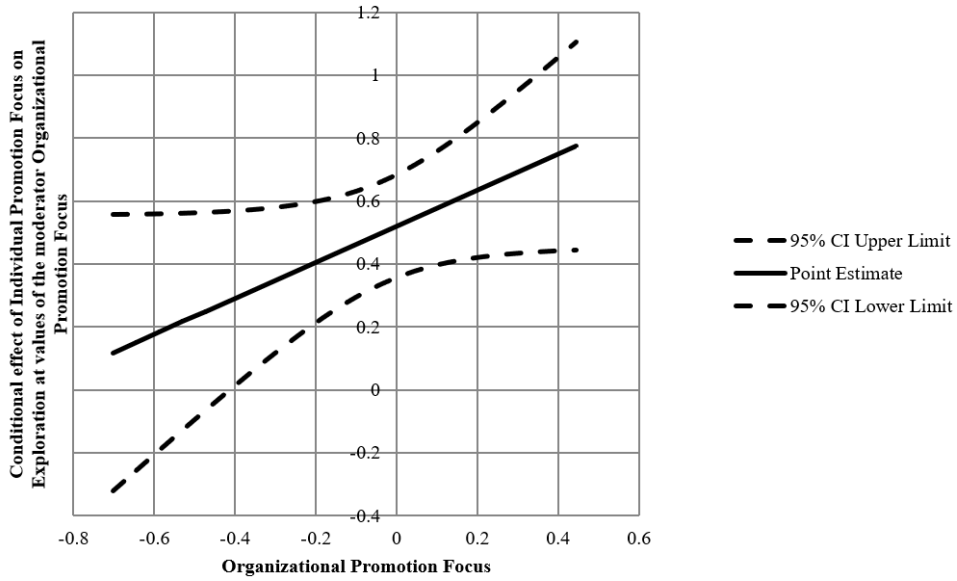


FIGURE 14

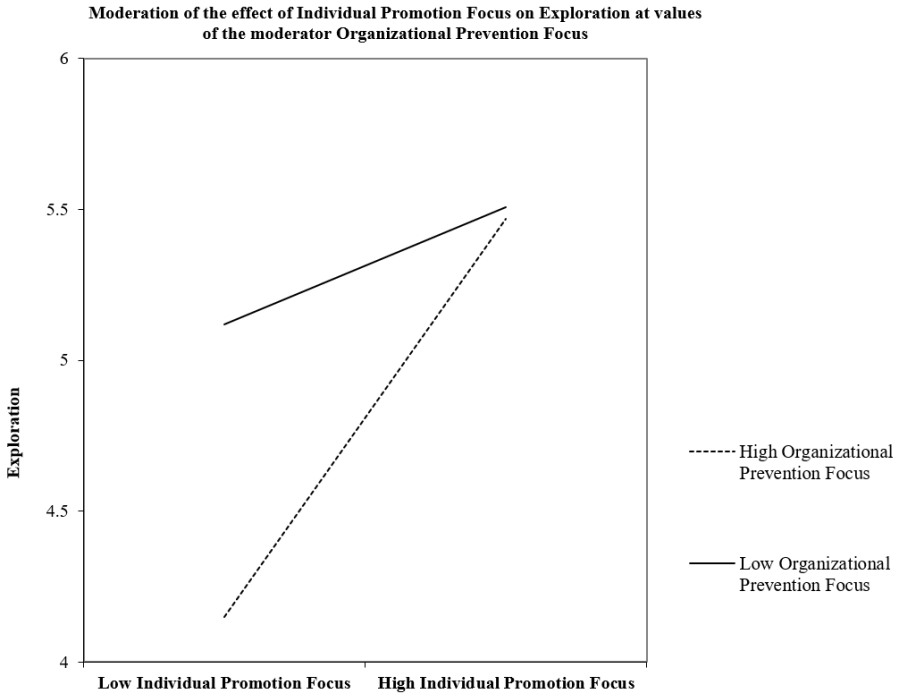


FIGURE 15

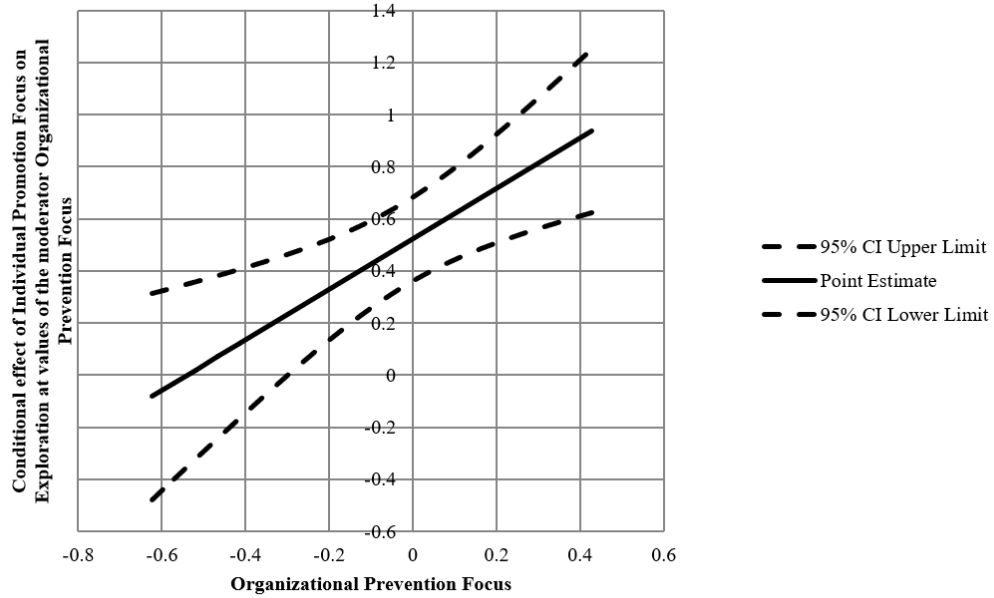


FIGURE 16

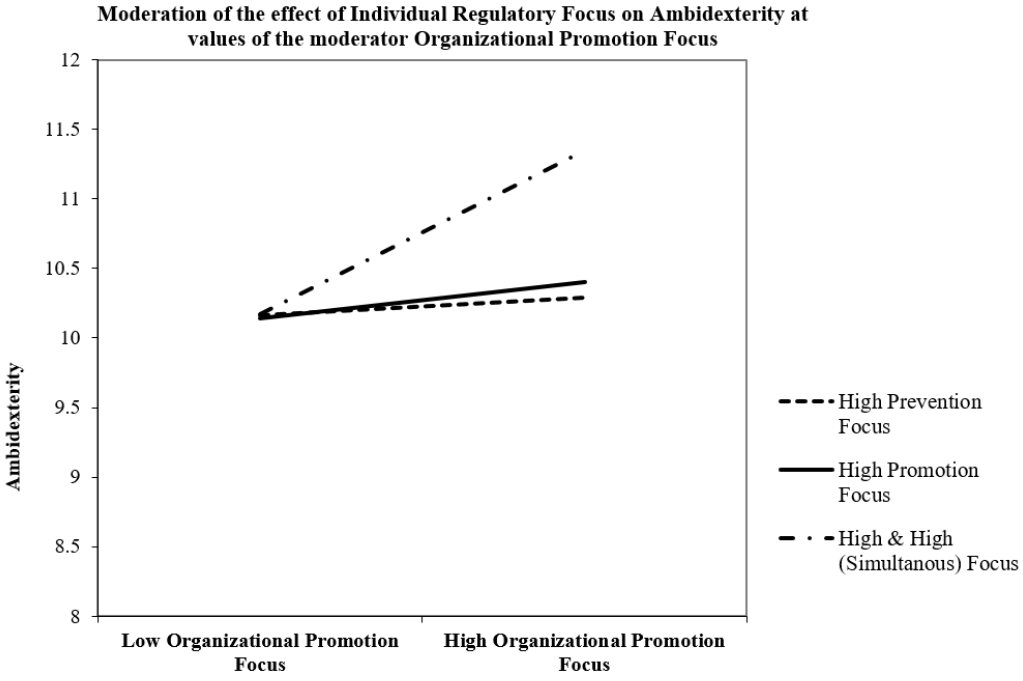
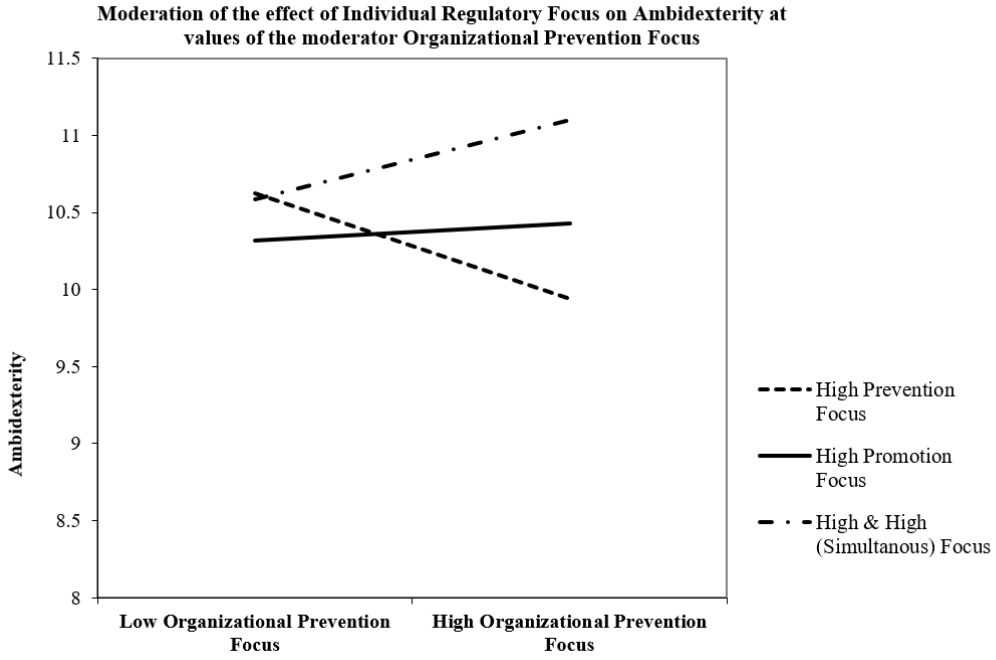


FIGURE 17



APPENDIX – ADDITIONAL MEASURES USED IN THE FIELD STUDY

Perceived collective regulatory focus
(Shin et al., (2016); 6-items used from original Neubert scale with organizational-referent shift (original team-referent shift in brackets).
Please indicate how well the following items describe your workplace (team) (1 = strongly disagree, 5 = strongly agree)

Organizational Prevention Focus

1. People in my workplace concentrate on completing their work tasks correctly to increase their job security
2. At work, people in my workplace focus their attention on completing their assigned responsibilities
3. People in my workplace focus their attention on avoiding failure at work

Organizational Promotion Focus

4. People in my workplace take chances at work to maximize their goals for advancement
5. If the job of people in my workplace did not allow for advancement, they would likely find a new one
6. At work, people in my workplace are motivated by their hopes and aspirations

CONCLUSION

This dissertation synthesizes several complexities of workplace creativity, covering the output, the processes and the interaction with the context. It aims to contribute to a better understanding of why, how and when individuals create novel and useful solutions. The first chapter offers a theoretical model of workplace creativity, that articulates the emotional-cognitive processes as three exemplary paths that result from regulatory focus and shape novelty and usefulness. In conceptualizing the emotional experience on two dimensions of arousal and valence, it contributes to a more nuanced discussion of the effect on cognitive processes and the facets of creativity. In addition, the chapter answers the call for theoretical work that specifies how diverse antecedents jointly affect creativity (Zhou & Hoever, 2014).

The second chapter contributes to understanding the processes underlying facets of workplace creativity. By examining the way different regulatory foci of individuals affect novelty and usefulness, this chapter offers a refined view on emerging research on workplace creativity comprised of two separate dimensions. The chapter separates the cognitive processes from creative behavior, which studies often use as proxy measures for creativity (Montag et al., 2012). As a result, the study is among the first to investigate the full path of the creative process and shows that individual differences facilitate cognitive processes, which in turn lead to creative outcomes. Across two studies, the pattern for promotion focus is in line with the prediction for novelty, whereas the effect on usefulness and the effect of prevention focus on both creativity dimensions has little effect. While promotion focus fosters flexible thinking, which helps novelty or

originality, it also fosters another side of flexibility, fluency, with a negative indirect effect on novelty. The chapter thus addresses calls for more complex mediation models of creativity (Zhou & Hoever, 2014), as it explores how promotion focus as an individual difference has a differential relationship with the underlying cognitive processes and in turn a distinct relationship with the creativity facets.

Finally, the third chapter of this dissertation contributes to understanding the mechanisms of how and when the organizational context impacts novelty and usefulness. Thus, the chapter contributes to the literatures of both creativity and regulatory fit theory, because it offers an organizing framework to understand the underlying mechanisms of creativity behavior of individuals in organizations. The chapter shows that fit between individual and organizational levels of regulatory focus leads to specific types of creativity. In addition, it explores the possibility that regulatory focus can operate at the organizational level and influence individual work behaviors. To the best of my knowledge, this research is one of the first to examine regulatory fit between an individual and the organization as congruence between individual chronic and organizational collective regulatory foci. It is also the first study to show that individuals in their pursuit of creativity are sensitive to the degree to which the organizational context fits their motivational orientation. Therefore, this chapter allows new empirical research to investigate the underlying mechanisms of interacting factors at higher levels.

In summary, this dissertation offers a holistic model of the various means by which individuals drive workplace creativity and hence acts as a steppingstone for future scholarly studies on workplace creativity.

CONCLUSIÓN

Esta disertación sintetiza varias complejidades de la creatividad en el lugar de trabajo, cubriendo la producción, los procesos y la interacción con el contexto. Su objetivo es contribuir a una mejor comprensión de por qué, cómo y cuándo los individuos crean soluciones nuevas y útiles. El primer capítulo ofrece un modelo teórico de la creatividad en el lugar de trabajo, que articula los procesos emocionales-cognitivos como tres caminos ejemplares, que resultan del enfoque regulatorio y dan forma a la Novedad y a la Utilidad. Al conceptualizar la experiencia emocional en dos dimensiones de la excitación y la valencia, contribuye a una discusión más matizada del efecto sobre los procesos cognitivos y las facetas de la creatividad. Además, el capítulo responde a llamadas de trabajo teórico que especifica cómo los diversos antecedentes afectan conjuntamente a la creatividad (Zhou & Hoever, 2014).

El segundo capítulo contribuye a la comprensión de los procesos que subyacen a las facetas de la creatividad en el lugar de trabajo. Al examinar la forma en que los diferentes enfoques reglamentarios de los individuos afectan a la novedad y la utilidad, este capítulo ofrece una visión refinada de la investigación emergente sobre la creatividad en el lugar de trabajo, que comprende dos dimensiones distintas. El capítulo separa los procesos cognitivos de la conducta creativa, que los estudios utilizan a menudo como medidas indirectas de la creatividad (Montag et al., 2012). Como resultado, el estudio es uno de los primeros en investigar el camino completo del proceso creativo y muestra que las diferencias individuales facilitan los procesos cognitivos, que a su vez conducen a resultados creativos. En dos estudios, el patrón de

enfoque de la promoción está en línea con la predicción de la novedad, mientras que el efecto sobre la utilidad y el efecto de la prevención se centran en ambas dimensiones de la creatividad tiene poco efecto. Mientras que el enfoque de promoción fomenta el pensamiento flexible, que ayuda a la novedad u originalidad, también fomenta otro lado de la flexibilidad, la fluidez, con un efecto indirecto negativo sobre la novedad. Por lo tanto, el capítulo aborda las llamadas a modelos más complejos de mediación de la creatividad (Zhou & Hoever, 2014), ya que explora cómo el enfoque de promoción como diferencia individual tiene una relación diferencial con los procesos cognitivos subyacentes y, a su vez, una relación distinta con las facetas de la creatividad.

Finalmente, el tercer capítulo de esta disertación contribuye a comprender los mecanismos de cómo y cuándo el contexto organizacional impacta la novedad y la utilidad. De esta manera, el capítulo contribuye a la literatura tanto de la creatividad como de la teoría del ajuste regulatorio, ya que ofrece un marco organizativo para entender los mecanismos subyacentes del comportamiento creativo de los individuos en las organizaciones. El capítulo muestra que el encaje entre los niveles individual y organizacional del enfoque regulatorio, conduce a tipos específicos de creatividad. Además, explora la posibilidad de que el enfoque regulatorio pueda operar a nivel organizacional e influir en los comportamientos individuales de trabajo. A mi leal saber y entender, esta investigación es una de las primeras en examinar el encaje regulatorio entre un individuo y la organización como congruencia entre el enfoque regulatorio colectivo individual crónico y el organizacional. También es el primer estudio que muestra que los individuos en su búsqueda de la creatividad son sensibles al grado en

que el contexto organizacional se ajusta a su orientación motivacional. Por lo tanto, este capítulo permite que nuevas investigaciones empíricas investiguen los mecanismos subyacentes de interacción de los factores a niveles superiores.

En resumen, esta disertación ofrece un modelo holístico de las diversas formas en que los individuos impulsan la creatividad en el lugar de trabajo y, por lo tanto, actúa como punto de partida para futuros estudios académicos sobre la creatividad en el lugar de trabajo.