# The Creative State of Mind

Wrońska, Marta

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# Chapter 1. For Play

Some like to do it in the shower, others indulge in it under the sky, and some can do it only when stroking a pussy. It also depends on the moment or the context: one might perform poorly at home, but suddenly feels the juices flowing in a lively café. It is highly dynamic and unpredictable. Although people have some degree of control over it, they cannot keep it at a constant level all the time. Thus, rather than seeing it as a goal that needs to be achieved, perhaps we should think of creativity as a fleeting state of mind, a distinct mental phenomenon, which can change from moment to moment?

Thinking of creativity as a fluctuating state is not very common in the scientific literature. In organizational behavior, creativity functions predominantly as a desirable outcome that brings about innovation, which in turn increases the profits of a company (J. Zhou & Hoever, 2014). For example, Amabile (2013) defines creativity as a "response" that must fit a particular goal; the "production" of ideas that are novel and useful (Amabile & Pratt, 2016, p. 158). Anderson et al. (2014, p. 1298) propose an integrated definition of creativity and innovation as a new process, outcome, or a product that consistently leads to "identifiable benefits". Further, creative ideas need to have at least "the potential to create value for organizations" (George, 2007, p. 441), and employees should generate creative ideas so that the companies can stay competitive (Shalley & Gilson, 2004). Overall, the organizational literature views creativity as concrete means to "organizational performance, success, and longer-term survival" (Anderson et al., 2014, p. 1298) as well as a form of (job) performance rather than something as fleeting as a mental state of an individual.

While there is little doubt that creativity and innovation play an important role in business, perceiving creativity solely through the lens of maximizing firm performance might be one-sided in two important ways. First, focusing on organizational outcomes overshadows the importance of human well-being, which different scholars pointed out not just in relation

to creativity. For example, Pfeffer (2010) observed that well-being components, such as job satisfaction or work-family conflict, are mostly researched from the perspective of the costs that they generate for the company; therefore, the author argued, employee well-being should receive more research attention in itself. Further, Greenbaum et al. (2012, 2023) introduced the concept of bottom-line mentality: excessive emphasis on a single outcome in an organization, which most often evolves around finances or other measures of performance. In the reviewed literature, they found that supervisor's bottom-line mentality relates to serious health consequences for the employee: workaholism, emotional exhaustion, psychological detachment, and insomnia, as well as to lower innovation. Other authors proposed the idea of sustainable working systems, which in contrast to intensive working systems, maintain the balance between profit and regenerating human and physical resources (see de Jonge & Peeters, 2019 for a review). Altogether, even though a growing body of literature offers alternatives to performance-focused research, this approach seems to be largely missing in the creativity domain.

Second, accumulated evidence on the nature of creative processes suggests that treating creativity predominantly as a target of one's (conscious) strivings poses serious limitations. Namely, some aspects of creativity remain outside of conscious control and can be even harmed by conscious effort (Harkins, 2006; Topolinski & Strack, 2008). Thus, rather than trying to control the uncontrollable, there is perhaps more to gain from improving our understanding of what it means to be creative in the moment. This is not to say that strategies, conscious effort, or training have no effect on creativity (e.g., Nijstad et al., 2010; Scott et al., 2004). Quite the opposite: creativity relies on memory recall and requires knowledge acquisition (Cropley, 2006; Nijstad & Stroebe, 2006). At the same time, however, not doing anything or engaging in undemanding activities can improve ongoing creative pursuits (Sio & Ormerod, 2009) and staying aware of the present moment and being mindful of the

surroundings sometimes relates to higher creativity (Lebuda et al., 2016). That unconscious or unrestricted thinking is just as important in creativity as conscious processes is also suggested by neuroscientific research: while the control ("executive") network in the brain is involved in evaluating creative outcomes against criteria, the default ("resting") network is activated during improvisation, generation, and overall, in the spontaneous part of the creative process (Beaty et al., 2015). In sum, multiple studies find that creativity consists of an interplay between controlled and spontaneous processes (see Chrysikou, 2019; Chrysikou et al., 2014; Sowden et al., 2015; Zhang et al., 2020 for reviews).

In the abundance of performance-focused approaches to creativity and scarce attention devoted to the role of spontaneous and fluctuating thinking processes in organizational literature, this thesis offers a different take on creativity-related phenomena and explores the concept of the *creative state*: a momentary property of the mind that provides fertile ground for creative ideas. With less emphasis on performance, this approach aims to better understand how the mind functions in the creative moment. In other words, I believe that creative thinking both *triggers* and *emerges in* a specific kind of cognitive-motivational state. Further, I propose this state can be studied in two main ways: (1) by investigating how creative idea generation manifests in cognition and motivation, and (2) by identifying which psychological states prepare the mind for creative idea generation. By finding out both about the manifestations and the antecedents of the creative state, we may be better able to manage creative fluctuations at work: shamelessly allow ourselves (and others) to be in creative stillness and reap the full benefits of creative outbursts. In the following, I expand on my understanding of the creative state and present an overview of how I, together with the co-authors, study the creative state in this dissertation.

## INTRODUCING THE CREATIVE STATE

In this dissertation, I define the creative state of mind as a temporary (fleeting) property of the mind that is activated by performing creative activities or prepares the mind for these activities. The creative state of mind is, as shall be detailed below, characterized by specific attentional, cognitive, and motivational parameters. Crucial to the creative state of mind as defined here is that it is not a stable disposition, nor necessarily only a predictor of creative behavior; it differs both between and within individuals (even within short periods of time), and can also be a result of engaging in creative activities.

The creative state is an important addition to the classic framework of Four Ps (Rhodes, 1961), which proposes that creativity can be viewed from the perspective of a product, process, person, and press (environment). The *product* refers to the measurable outcomes of creative thinking, so it relates to the performance-focused approach to creativity. The creative *process*, on the other hand, seems related to the creative state. However, in contrast to the creative state, the creative process approach describes the internal changes *within* the creative process, so for example, when and how a person switches between the stages of problem construction, information search, idea generation, and idea selection (e.g., Tolkamp, 2022). Creative states are not so much about the internal dynamic of the creative process, as they are about the moment in which creative ideas may emerge. In general, the occurrence of these creative moments can vary from person to person, and the creative *person* may experience creative states more often. Although the creative state is not meant to differentiate between more and less creative people, it is important to note that the subjective experience of the creative moment and its cognitive-motivational components may differ depending on personality traits, such as openness to experience (McCrae, 1987; Oleynick et al., 2017) or need for structure (Rietzschel et al., 2007, 2014a, 2014c). Lastly, creative *press* is distinct from the creative state, but it is related, as creative press may shape creative states:

being in a particular environment or interacting with people in specific ways may contribute to a more or less creative state of mind. One way of learning more about what it means to be in a creative state is to study the ways in which creative press, understood as momentary, situational influences, stimulates creative outcomes. This approach seems to be rare, at least in applied psychology, organizational behavior, and management, as most studies on creative press focus on stable characteristics of the work environment, such as job characteristics, rewards, or supervisory support (Shalley & Gilson, 2004).

In sum, the creative state does not clearly fall into any of the Four Ps. It is distinct from the product, process, person, and press: it does not necessarily lead to a creative product, it captures a temporary characteristic of the "idea-generating" mind rather than changes within the creative process, it can be experienced by both more and less creative persons, and it can be triggered by situational characteristics (press). One problematic thing about such understanding of the creative state is that it seems somewhat abstract and intangible, perhaps even difficult to study, at least without the use of neuroimaging techniques.

To address this issue, I explore the creative state from two perspectives, namely, (1) what are the cognitive-motivational experiences of people *during* the creative activity? and (2) what types of psychological states allow people to produce (more) creative outcomes? On the one hand, when in a creative moment, people may experience certain cognitive (side) effects, such as a broad and open way of perceiving things, rather than a narrow attention to details. Motivational experiences, on the other hand, could include how competent and satisfied one is feeling in the creative moment. An example of psychological state that may be conducive to creativity is when one pays attention to the sounds of the surroundings or recalls unusual experiences from a holiday trip. The activated psychological state – such as openness to the surrounding world or curiosity – might be exactly what is needed for creative

ideas to emerge, which as a consequence, may show up in better creative ideas. In the following, I elaborate on these two sides of the creative state.

**During the creative activity**

I propose that properties of the creative state can be observed through cognitive, motivational, and emotional characteristics that emerge during or as a consequence of engaging in creative activities. Although creativity has mostly been studied in the context of what enhances it, some theoretical approaches began to consider what engaging in creativity entails for cognition, motivation, and emotions. For example, the metacontrol state model proposed that currently active goals trigger a certain *metacontrol state*, which is defined as "the general information-processing mode that the thinking individual establishes in order to carry out divergent- or convergent-thinking tasks" (Hommel, 2015; Zhang et al., 2020, p. 2). The authors distinguish between two metacontrol states: *Flexibility* is characterized by openness to incoming stimuli and allowing for more alternatives, while *persistence* means that one option is strongly favored over the other, and that thinking is guided by predefined criteria rather than incoming information (cf. Nijstad et al., 2010). According to the metacontrol state model, engaging in open-ended creative activities – divergent thinking – results in a flexible metacontrol state, while looking for a single solution – convergent thinking – leads to a persistent metacontrol state. Indeed, some initial findings showed that divergent and convergent thinking result in distinct metacontrol states. Specifically, divergent thinking has been found to trigger more positive mood (Akbari Chermahini & Hommel, 2012), easier switching between competing tasks (Fischer & Hommel, 2012), and worse detection of details (Hommel et al., unpublished manuscript). Other authors found that engaging in creative tasks can induce both positive and negative feelings: a more positive mood through a heightened sense of autonomy and a more negative mood through feeling

less absorbed in the activity (Bujacz et al., 2016). In this dissertation, I further consider affective and cognitive effects of engaging in creative activities.

**Before the creative activity**

Observing the cognitive, motivational, and affective expressions of the creative state will give us an idea of what it means to be in the creative moment and how engaging in creative activities affects the mind in the here and now. The reality, however, is that people are not creative all the time (for a review, see Beghetto & Corazza, 2019; Silvia et al., 2014), and observing manifestations of the creative state gives little insight into when and why the creative state emerges. The question that follows, therefore, is why the creative state fluctuates: What causes a person to be more or less creative in the moment?

One possibility, which is consistent with earlier work (e.g., Baas et al., 2008; Chrysikou et al., 2014; Sio & Ormerod, 2009), is that certain situational variables trigger a certain mental state that does or does not fit with performing creative activities. In other words, certain psychological states *match* while others *mismatch* the nature of the creative activities, and a match will be reflected in higher creativity of generated ideas while a mismatch will lead to less creative ideas. Indeed, multiple studies found that momentary psychological states may influence creativity. For example, creativity has been situationally enhanced by certain types of meditation (Baas et al., 2014; Colzato et al., 2012, 2017; Lippelt et al., 2014), by thinking of the distant future (F. C. Chiu, 2012; de Dreu et al., 2011a; Koh & Leung, 2019), by imagining one's life as a punk (Förster et al., 2005), or by making a sandwich in an atypical order of steps (Ritter et al., 2012).

However, no unifying theories exist to explain why certain situational influences trigger a creative state of mind, and what this state of mind entails specifically. Thus, although living as a punk might be a great idea in itself, especially in overly bureaucratic organizations, we need to know *why* the punk-state and other states (mis)match creative

activities. This will help us understand why the creative state fluctuates, as well as how to make it more likely to emerge. In this thesis, I address this need by offering a theoretical framework of why momentary states of mind may, in principle, make people more creative. Additionally, I conduct a meta-analysis and quantify how strongly psychological states influence creativity.

## OVERVIEW OF THE CHAPTERS

The chapters in this dissertation investigate the creative state from two sides. On the one hand, cognitive (Chapter 2) and emotional (Chapter 3) experiences during the creative activities (i.e., intrapersonal properties of the creative state); on the other hand, situational factors that trigger certain psychological states that (mis)match performing creative activities (Chapter 4). Each of these chapters used varying methodologies and collected data independently. Chapter 2 reports two experimental studies from Polish students and various employees. Chapter 3 uses data from a randomized controlled trial collected in five different countries among students and the general population. Chapter 4 develops a new theory and uses published and unpublished research to conduct four meta-analyses.

The data for Chapter 3 were collected as a part of a larger international project (see Bujacz et al., 2014 for a description). All chapters can be read independently. Chapters 2 and 3 have been published and are reported here in the published form. Chapter 4 presents the broadest review of the creativity field, and consists of two subchapters: a theoretical review and a meta-analysis. In Chapter 5, I integrate findings from all chapters, point out similarities and differences, and place the thesis within the broader theories of states of mind; I interpret the findings from a practical viewpoint and propose how the creative state of mind may balance performance-focused approaches to creativity in organizational practice.

## Chapter 2: Engaging in Creativity Broadens Attention

In this empirical chapter, we take a closer look at attentional breadth, a cognitive-motivational property of the mind. As long as one is not sleeping or unconscious for some other reason, attentional breadth will be always somewhere on the spectrum between broad and narrow. People in a broad attentional state notice what happens around them and see the forest for the trees, similar to how one might lazily explore a bookstore on a rainy afternoon. People in a narrow state of attention perceive only the elements that are central to their current activity, similar to how one might browse titles in a frantic search of a concrete book. Coming up with new and useful ideas relies to a big extent on associating remote concepts (Kenett et al., 2014; Martindale, 1989a; S. A. Mednick, 1962), and so, broad attention has been argued and found to improve creative thinking (Ansburg & Hill, 2003; Colzato et al., 2012, 2017; Kasof, 1997; Lippelt et al., 2014; Mendelsohn, 1976). In this chapter, we flip this idea around, and investigate if being in the creative state may also broaden the scope of attention.

To test this idea, we asked participants to generate creative ideas, to guess which word connects three presented words (Remote Associates Test, Mednick, 1962), or to solve a logical puzzle. In the first study, we interrupted participants during the experimental task and asked them to complete an attentional breadth measure. In the second study, different shapes and symbols were displayed on the periphery of the screen while participants worked on their task. Once their task was complete, we asked them whether they recognized each of the symbols, and thus measured attentional breadth during task solution. Overall, this chapter shows how the cognitive system responds when one is coming up with creative ideas, and whether the creative state can be distinguished from other states triggered, for example, by analytic thinking.

## Chapter 3: Person-task fit: Emotional consequences of performing divergent versus convergent thinking tasks depend on need for cognitive closure

Chapter 3 takes the creative state further and asks an important question: does everyone experience the creative state in a similar way, or is it possible that it causes discomfort to some people? To provide a safe and inclusive environment for diverse groups of employees, we need to learn how people with different personalities feel during creative activities. One particularly relevant personality trait is Need for Closure (Webster & Kruglanski, 1994). People scoring high on that need feel the urgency to have final answers, to resolve ambiguities, and to maintain order and structure in life. Such a way of functioning seems the opposite of what is needed in creative idea generation: openness to new, unusual, and often ambiguous ideas, as well as refraining from treating any idea as final or definitive. Thus, it seems likely that people high in need for closure will not enjoy the creative activity, and may even feel less competent in generating ideas (see also Chirumbolo et al., 2004, 2005; Sankaran et al., 2017).

To test the idea that there is a misfit between creative activities and preferences for finality and structure (i.e., high need for closure), we used data from a larger international project (Bujacz et al., 2014), in which participants were randomly assigned to solve a divergent (with multiple possible answers) or a convergent (with a set of correct answers) task. Within each condition, participants could choose one of three tasks which varied in difficulty. After the task was completed, participants reported how competent, annoyed, and positive they felt during the task. Overall, this chapter shows that the creative state can have different consequences for different people, suggesting important implications for the workplace, especially when creativity is a big part of the job.

**Chapter 4: The Creative State of Mind: A Proposed Theoretical Integration and Meta-Analysis**

In this chapter, we turn to the second side of the creative moment, namely, what happens *before* the creative activity. Given that people have more and less creative moments (Silvia et al., 2014; K. Smith et al., 2022), perhaps certain situations can create a state of mind that is more versus less suited for performing creative activities. Indeed, creativity can be situationally enhanced by feeling happy and energetic rather than relaxed or sad (mood states; Baas et al., 2008), striving for ideals and aspirations as opposed to fulfilling obligations (regulatory focus; e.g., Friedman & Förster, 2001), or thinking of events far away in the future as opposed to today's events (construal level; e.g., Chiu, 2012). Research has accumulated evidence on a broad variety of these transient psychological states, while a theoretical integration of these diverse findings is missing.

Thus, in this chapter, we review the literature and propose that the diverse effects of momentarily induced states can be reduced to a smaller set of basic mechanisms. Using a combined top-down (based on the theory) and bottom-up (based on specific studies) approach, we argue that psychological states enhance creativity because they elicit broad awareness of elements that might otherwise be filtered out as irrelevant (unconstrained thought), thinking in terms of broad, abstract and inclusive categories (abstractness), striving to be individualistic and unique (uniqueness), and experiencing situations that turn one's expectations upside down (open-mindedness). In the second part of the chapter, we provide an initial test of these four mechanisms and report results of four meta-analyses, in which we test the effects of different methodological moderators.

**Chapter 5: The Afterparty**

In the last chapter, I discuss the ways in which our findings broaden the understanding of the creative state, place the creative state in the midst of Four P's, and describe the

limitations of our findings and exciting opportunities for future research. I close the thesis with a conclusion combined with practical recommendations.

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