

# Creativity and Emotions

Introduction

Zorana Ivcevic, James C. Kaufman, Jessica D. Hoffmann,  
and Shengjie Lin

What are we talking about when discussing creativity and emotions? When we say that creative idea generation is more successful in positive energized moods (Baas et al., 2008), when we describe artists as emotionally sensitive (Feist, 1998), and when we say that emotion regulation ability mediates the relationship between creative potential and observed creativity (Ivcevic & Brackett, 2015), we are discussing different aspects of creativity and different aspects of the affective process. These examples point to the need for specification that creativity scholars have recommended for years (Baer, 1998; Glăveanu et al., 2020). In describing the relationship between creativity and emotions, there isn't a simple answer. Rather, we are putting together a puzzle in which each piece has its particular place. Although the topic of emotions is regularly discussed in major edited volumes on creativity, these chapters are by necessity limited. This volume aims to give a broad overview of the diverse questions examined by creativity scholars in relation to affective processes.

Because we take an expansive approach to the study of both creativity and emotions, we need to start with definitions of basic concepts. First, what is creativity? The standard definition of creativity (Runco & Jaeger, 2012) includes two parts: originality and effectiveness (sometimes referred to as appropriateness, usefulness, or meaningfulness). These criteria can be applied to creative thinking (original and effective ideas), self-concept (perceiving oneself as original and effective), or behavior (acting in ways that are both original and effective). Each of these aspects of creativity has different attributes. For instance, creative thinking is most often examined in terms of idea generation (and even more specifically, divergent thinking), but it also includes problem finding, convergent creative thinking, and idea evaluation (Barbot et al., 2016; Mumford et al., 1991). Self-concept of creativity includes constructs such as creative self-efficacy (Farmer & Tierney, 2017), attitudes toward creativity (Ivcevic & Hoffmann, 2021), and creative personality (Gough, 1979). And creative behavior is variously studied as the frequency of different creativity-relevant activities (Diedrich et al., 2018), level of creative achievement (Carson et al., 2005), observations by relevant others (supervisors, peers, or teachers; Grohman et al., 2017; Zhou & George, 2001), or actual creative products

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(Amabile, 1996). Finally, although it is not fully clear to what extent creativity-relevant attributes and processes are domain-general or domain-specific, creativity visible in behavior and achievement is expressed in specific domains – people write novels, create sculptures, develop choreographies, found new enterprises, invent new gadgets, or test scientific theories (Kaufman et al., 2017). Creativity is studied in reference to a specific domain of work (e.g., creativity in screenplay writing, Bourgeois-Bougrine et al., 2014), embedded within a domain of work, but assumed as relatively domain-general (creativity at work, across multiple industries and roles; Amabile et al., 2005), or as domain-general (Silvia et al., 2021).

In defining affective processes, we can distinguish affective states, affective traits, and emotion abilities. Affective states are physiological and psychological experiences evoked by internal or external events and their appraisals, from relatively brief emotions to longer and more diffuse moods (Ellsworth & Scherer, 2003). Affective states vary along dimensions of hedonic tone or valence (from more intensely negative/unpleasant to neutral to more intensely positive/pleasant) and activation or arousal (ranging from low to high; Barrett, 2006). Thus, four distinct groups of affective states can be distinguished: positive activated (e.g., happy, delighted), positive deactivated (e.g., serene, satisfied), negative activated (e.g., angry, apprehensive), and negative deactivated (e.g., gloomy, bored). In addition, motivational aspects of affective experiences can be described as prevention- or promotion-oriented (Higgins, 2006; Klenk et al., 2011). While emotions and moods are relatively short-lasting, typical affect experienced across time and situations (e.g., usual way of feeling) describes emotion traits, either broad ones (e.g., positive or negative trait affect; Watson & Clark, 1997; Widiger, 2009) or those pertaining to a specific emotion (e.g., trait curiosity; Kashdan & Steger, 2007).

Research on emotion and cognition points to a hybrid construct of emotion abilities – capacities to think and reason about and with emotions and to solve emotion-related problems (Mayer et al., 2008; Salovey & Mayer, 1990). These abilities are based on the view of emotions as conveying information (Martin et al., 1993; Schwarz, 2012), which can be used to guide thinking and problem solving, as well as the intrinsic property of the affective experiences to include an aspect of emotion regulation (Kappas, 2011; Mayer & Salovey, 1995). Two sets of emotion abilities have been studied in relation to creativity – emotional intelligence and emotional creativity. Emotional intelligence encompasses the abilities to accurately perceive emotions in oneself and others, use emotions to inform thinking and problem solving, understand the nature and the typical course of emotions, and effectively regulate emotions toward either hedonic or instrumental goals (Mayer et al., 2016). Emotional creativity is the ability to experience novel, yet appropriate and authentic, combinations of emotions (Averill & Thomas-Knowles, 1991). These abilities are theoretically and empirically distinct (Ivcevic et al., 2007). Both sets of abilities can be studied using performance-based tests that require solving of emotion-related problems using either convergent (in the case of emotional intelligence) or divergent thinking

processes (in the case of emotional creativity). In addition to being assessed as abilities, both emotional intelligence and emotional creativity can be assessed as self-perceived traits (Averill, 1999; Wong & Law, 2002). Assessed as traits, emotional intelligence and emotional creativity are self-concept attributes akin to self-efficacy – self-perception or belief that one is able to solve emotion-related problems.

This volume is organized in five sections. The first section focuses on methodological issues. Baas (Chapter 1) reviews issues in experimental research in the study of creativity and emotions. This method has most commonly employed mood induction techniques to gain experimental control over the experienced affective states. Although much has been learned from these studies about creative idea generation, mood induction produces short-lasting effects, making it suitable for a limited scope of questions. Once researchers become interested in creative thinking and behavior directed at tasks lasting more than a few minutes, the experimental techniques cease to be helpful. That is where case study methods (Hanchett Hanson et al., Chapter 2), observational methods (Katz-Buonincontro, Chapter 3), and experience sampling and daily diary methods (Cotter, Chapter 4) offer promise of nuanced understanding of real-world creativity. The experience sampling and daily diary methods are capable of capturing creativity as it is occurring, examining within-person variability in affective processes and creative behavior, and addressing the influence of environment on creative behavior. Case studies (via evolving systems or participatory approaches) and observational methods (via structured observation or naturalistic observation) can be a source of hypotheses that can be tested using assessments in everyday environments.

We use the broad, yet useful distinction among the study of the creative process(es), the creative person, and creative products, and consider applied issues in the study of creativity and emotions in the contexts of school and work (Rhodes, 1961). We start with the consideration of affect in the creative process with the review of research on affective states in creativity (primarily creative thinking; Madrid et al., Chapter 5). Next, the neuroscience research on creative thinking and emotions is reviewed (Chrysikou et al., Chapter 6) and emerging research on the role of affect in relation to attentional processes relevant for both convergent and divergent creative thinking is considered, on the spectrum from mindfulness to mind wandering (Kane et al., Chapter 7). Forgeard (Chapter 8) describes research about the motivation, including intrinsic and intellectual, emotional, and prosocial motives for creativity, which reinforces the overlap between motivation and emotions and their influence on creativity. Two subsequent chapters relevant to emotion abilities discuss the coping with uncertainty and difference in creativity (Liu & Damian, Chapter 9) and the role of emotional intelligence abilities (and how they can be taught and learned) for creativity (Hoffmann & McFarland, Chapter 10). The final chapter in this section discusses the role of emotions in the creative process across domains of creativity (i.e., artistic, scientific, design, writing, musical, and culinary; Botella, Chapter 11).

In discussing the creative person, we start with the traditional question of how emotion traits relate to different aspects of creativity, from the decision to engage in creative work to self-perceived creativity to creative behavior to performance in specific creativity domains (Ivcevic, Chapter 12). Although the creative person has been primarily studied in relation to individual differences in personality traits, an understanding of other attributes describing creative individuals is necessary to complete the picture. Taylor (Chapter 13) discusses the surprisingly understudied topic of gender differences in the study of creativity and emotions, followed by two chapters that examine age as it relates to creativity and emotion: Russ (Chapter 14) reviews research on pretend play as a form of childhood creativity and affective processes at its core, and Ermoshkina and Kahana (Chapter 15) examine emotion regulation and creativity in relation to everyday challenges of aging. Because creativity does not happen in a social vacuum, and individual creators interact with others in their domain (coworkers, collaborators, and gate-keepers) as well as their audiences, Lebeda and colleagues (Chapter 16) discuss the emerging area of research on interpersonal relationships (e.g., parent–child, sibling, mentor–mentee), social emotions (e.g., embarrassment, gratitude, and shame), and their role in creativity.

In considering creativity as a product, the authors review research on emotions themselves as creative products as well as research on affective consequences of engagement in creative activities. Trnka (Chapter 17) reviews scholarship on emotional creativity – a set of abilities and traits describing original, authentic, and effective emotional experience; here, emotions are in themselves a creative product. Kapoor and Mange (Chapter 18) discuss dark creativity, which is defined by its emotion-related features (intent and/or actual harm), as well as how it is predicted by emotion-related states and traits. Although much work treats creativity as an outcome, when it is treated as a predictor, it is related to affective outcomes (Forgeard & Kaufman, 2016). Tinio and Specker (Chapter 19) present a model describing emotional effects of art on the audience and how these effects relate to emotions artists intended to express. Three chapters examine emotion-related benefits of creativity. Grossman and Drake (Chapter 20) focus on affect associated with participation in everyday activities that are artistic in nature (e.g., visual arts, music) and non-artistic (e.g., cooking, gardening); Holinger and Kaufman (Chapter 21) present a model of how everyday creativity creates a pathway to psychological well-being, especially purpose and meaning; and Orkibi and Keisari (Chapter 22) describe the therapeutic process of Creative Arts Therapies (CAT) and propose a new model to describe the role of creativity in the effectiveness of CAT to improve emotional well-being. Finally, instead of examining outcomes of emotional experiences (and well-being), Stutesman and Goldstein (Chapter 23) discuss engagement with the arts (visual art, theatre, dance, music, and multi-modal art) as a vehicle for developing emotion abilities, such as theory of mind and emotion regulation.

The last major section of the Handbook grapples with applications of research on creativity and emotions in the context of school and work. Anderson (Chapter 24) focuses on affective states of anxiety and fear of failure in the creative process and discusses how to increase creativity by managing, or even leveraging, these states among children and adolescents. Karwowski (Chapter 25) examines peer and classroom climate influence on affective experiences and creative self-concept as they relate to creativity at school. Beghetto and Schmidt (Chapter 26) present a model describing potential pathways from creative curricular experiences to creative expression and development and the role of uncertainty (with the emotional reactions it engenders) in this process.

Creativity at work is examined on multiple levels. Emich and Lu (Chapter 27) discuss organizational affective climate and its consequences for individual creativity. They propose a new definition of affective climate: the affective state that forms among members of a collective in response to their shared experience. Madrid et al. (Chapter 28) focus on group affective tone and its relationship to creativity at work and proposes a model describing broaden and build and social integration processes as mediators between group affective tone and group creativity. Reiter-Palmon and Millier (Chapter 29) emphasize a single key dimension of emotional climate – psychological safety – and discuss the mechanisms through which it exerts influence on creative behavior of both individuals and teams. Connelly and Demirag Burak (Chapter 30) review research on leadership; leaders have an outsized influence on both employees' experience of work and the way they can perform their job (through providing creativity-relevant resources and supports). Finally, Ashkanasy and To (Chapter 31) present an integrative model depicting the role of emotions in creativity at work. They posit that creativity in organizations needs to be examined at (1) the within-person level (intraindividual variation through time), (2) the level of interindividual differences in creativity-relevant attributes, (3) interpersonal level, (4) team or group level, and (5) the level of organizational culture or climate.

The concluding chapter looks back at what we have learned across the five parts of the Handbook and chapters by 31 contributor teams and aims to both connect the dots and look ahead. This chapter builds on findings and proposals in this Handbook and the Editors' own work and presents a theoretical model of affective processes across different aspects of creativity. Here, the goal is primarily to stimulate new research that examines the role of affective experiences, traits, and emotion abilities in the prediction of creative beliefs and intentions, engagement in long-term creative behavior, and production of creative outcomes.

It may seem folly to construct a book centered on the interrelationships between two constructs that are multifaceted and nuanced yet also widely perceived as being “soft” and difficult to study. As you read the chapters that follow and the conclusion that aims to integrate them into a unifying model, we hope that you come to the same conclusion that we have reached: There is an astounding array of high-quality research on creativity and affective processes, with unlimited possibilities for continued work.

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PART I

Methods in the Study of Creativity  
and Emotions

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# 1 Experimental Methods in the Study of Emotions and Creativity

Matthijs Baas

## Introduction

Affective states, including mood, emotion, and general affect, are among the most widely studied predictors of creativity (Baas et al., 2008; Davis, 2009; Isen, 2000; Ivcevic & Hoffmann, 2019). Within this burgeoning field of discovery, experimental research designs play a crucial role. Experimental research designs enable researchers to better understand the link between affective states and creativity as well as make causal inferences. In order to study the influence of affective states on creativity, the researcher first has to bring a respondent into an intended emotional state, after which the respondent performs a suitable creativity task. For instance, before respondents perform a creativity task, they may first watch a clip from a sad movie to become relatively sad (Kaufmann & Vosburg, 2002), receive an unexpected bag of candy to elicit positive affect (Isen et al., 1987), or recollect and reexperience an event that made them feel anxious (De Dreu et al., 2008). Although less common, it is also possible to study the reversed link: the influence of the act of creative thinking on experienced affective states. Here, the researcher first has to induce creative thinking in respondents, after which respondents rate how they feel.

Importantly, there are a multitude of affect-elicitation procedures, affect-rating instruments, and creativity tasks, each having its own strengths and limitations. Which ones should a researcher use? For instance, should a researcher elicit affective states with film clips, music, or the recollection of emotional memories? In addition, there are general experimental design characteristics to consider. For instance, should researchers implement their mood-manipulation check before or after their measurement of creativity? How long can a researcher allow for the creativity task to be performed before the manipulation of the emotional state wears off? Answering these questions, this chapter provides an overview of affect-elicitation procedures along with examples of experiments and general experimental design considerations. This chapter's aim is to assist researchers in making informed decisions in designing their experiments to study the link between affective states and creativity. Before turning to the possible affect-elicitation procedures, this chapter first briefly addresses the terms *mood*, *emotion*, and *affect*.