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CHAPTER 3

Theories of Creativity

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C3P1 Creativity is a complex phenomenon that, in paradigmatic cases, involves a subject, a process, an output, and a context in which the output is judged to be creative. Accordingly, we can take various approaches toward explaining creativity. We can take the subject, the process, or the product to be fundamental, and our explanatory focus can correspondingly be on what makes a subject, what makes a process, or what makes a product creative.

C3P2 In psychology, systematic research on creativity started in the 1950s, and creativity has since been omnipresent in many areas of the discipline, such as cognitive, developmental, clinical, organizational, social, and cultural psychology (see Kaufman and Beghetto 2009, 1). More applied areas of research such as education, economics, the arts, and more recently AI studies have shown growing interest in creativity.

C3P3 Philosophers, however, haven't paid much attention to the phenomenon until recently, and only during the last two decades has interest in the topic grown (see Paul and Stokes 2024; see also Chapter 5, "Historical Treatments of Creativity in the Western Tradition," this volume; for some distinctions and theories in recent creativity literature, see Chapter 1, "Reclaiming the Creative Imagination," this volume). This growing interest gives us reason to reflect on how philosophical research on creativity could and should be done in the future, starting with the question of what exactly a philosophical theory should explain, especially in contrast to a psychological theory.

C3P4 I will thus look at recent creativity research in philosophy in relation to creativity research in psychology, and I will address the following questions. What is the nature and scope of the phenomenon of creativity (section 3.1)? What have been some of the systematic approaches to and theories of creativity in psychology (section 3.2)? How has research in psychology influenced recent philosophical theories on creativity (section 3.3)? How may philosophy, in a distinctive way, contribute to creativity research in the future (section 4)?

C3P5 With respect to the last question, I will suggest that to account properly for the phenomenology as well as the function and value of creative processes, we need to look at these processes separately from the creative product (see also Langkau 2025). The idea is that we treat creativity as we treat empathy (see also Langkau 2022). Just like creativity, empathy is a complex phenomenon that, in paradigmatic cases, involves a subject, a process, an output, and a context in which the output is valued. A subject takes over the perspective of a target in order to understand the target's situation and, in many but not all cases, engages in some sort of helping or moral behavior. However, we address the question of what empathy is separately from the question of what the criteria of good or moral behavior are. This is exactly what I will suggest for future creativity research in philosophy: We should address the question of what creative processes are (Process Creativity) separately from the question of what makes a product creative (Product Creativity).

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3.1 The Phenomenon of Creativity

C3P6 Assume a poet has an idea for a poem, tries out various ways of realizing it, and ends up with a version of the poem they are happy with, and that eventually gets recognized as new and valuable within a certain tradition. We can either call the *poet* creative, or the *process of coming up with the poem*, or the *poem itself*—or, of course, all three. But should a theory of creativity explain all three aspects of the described phenomenon? With a complex phenomenon such as creativity, any theory will likely focus on one aspect, or take one aspect to be more fundamental than the others.

C3P7 Here are just a few aspects a philosophical theory may aim to explain. With respect to the subject, we are interested in what makes a person like a poet creative and what kind of feature creativity is. With respect to the process, we should be able to say something about the nature of the process of coming up with, for example, a poem, how we can teach creativity to children, why we value creative activities, and why we think being at least minimally creative is part of living a good life. Finally, with respect to the product such as the poem itself, we should be able to explain what it means that a certain creative product is valuable, what it means that the product is novel, and what the role of the context, for example, a tradition of writing poems, is. Further, we should be able to explain what distinguishes the poet and their creativity from a creative scientist who comes up with a new theory that is in some sense valuable within the scientific community.

C3P8 The standard definition of creativity in psychology[1] is bipartite (see Runco and Jaeger 2012), and it is often presupposed by or taken as the starting point of philosophical discussion:

C3P9 1. Creativity is the ability of a subject to generate an idea or artifact that's new and valuable, significant or useful.

C3P10 Philosophers generally agree that the idea or artifact must be produced in a certain way—in a way that potentially excludes nature, current AI, and possibly animals from the capacity of being *really* creative. For instance, it has been defended that the creative process needs to be conscious, possibly coming with a certain phenomenology, it has to be autonomous, possibly involving agency, or that it has to be intentional and can't be mechanical (see, e.g., Boden 2014; Gaut 2003; Nanay 2014; for a list of criteria in the literature, see Paul and Stokes 2024). We can thus include the condition that the creative idea or artifact ought to be produced in a certain way, as follows:

C3P11 2. Creativity is the ability of a subject to generate, in a particular way, an idea or artifact that's new and valuable, significant or useful.

C3P12 We can see that this broad definition of creativity aims to capture the phenomenon over all three aspects: the subject and their abilities, a certain process the subject engages in, and a product that can potentially be judged to have certain qualities.

C3P13 In offering explanations, philosophical theories typically aim to give an adequate description of the relevant phenomenon, often by highlighting systematic and normative relations, for example, between concepts. Like theories in other disciplines such as psychology, the explanatory force of a philosophical theory consists in its simplicity, consistency, and coherence. Psychology, as an empirical discipline, is moreover and especially interested in

[1] Though a study by Plucker et al. (2004) showed that few psychologists explicitly define creativity, see Kaufman and Beghetto (2009, 1).

empirical (measurable) accuracy of a theory as well as in individual testability of the phenomenon. In what follows, I will present some selected creativity research in psychology, some of it from the very beginnings of creativity research. My underlying assumption is that psychological research may have influenced our commonsense notion of creativity as well as how research on creativity has developed in philosophy. Of course, this assumption can hardly be confirmed or shown to be false. But the research I will present will at least give us reasons to be critical of certain tendencies in current philosophical research on creativity and to strengthen other tendencies or even explore new paths within the explanatory possibilities of philosophical theories.

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3.2 Creativity in Psychology

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Early creativity research in psychology focused on the exceptional creative subject or genius.[2] An interesting early empirical study was conducted by Donald Wallace MacKinnon (and collaborator Wallace B. Hall) and was published in several papers by MacKinnon (1962, 1964, 1966). MacKinnon's work was influenced by Otto Rank (e.g., Rank 1929, 1932), an Austrian psychoanalyst and one of Sigmund Freud's closest colleagues. Rank thought of life as moving from the trauma of birth to the trauma of death, with humans facing two opposed fears: the fear of life, manifesting in fear of separation and independence, and the fear of death, manifesting in the fear of union and dependence. In their way of coping with these fears, humans fall into three categories: They either have no creative potential, or they notice their potential but are not able to actualize it, or they are of the creative type who can actualize their full potential. On Rank's view, the creative person is such that they can cope with the two fears of life in a productive way.

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Given that not everyone is a creative person, according to this picture, MacKinnon et al. had to find the right group of people to study. Architects, they thought, would be the ideal kind of people, because they reveal what is "most characteristic of the creative person" (MacKinnon 1964, 274) in being at the same time artists and applied scientists, given that their work must satisfy both aesthetic and technological requirements. The assumption, then, was that among architects, there would be more creative ones and less creative ones, and only the more creative ones would be worth studying. But which ones are they, and how could they be identified? To ask the common folk proved to be of no use: Researchers were facing rather superficial stereotypes such as that the creative person is "a genius with an I.Q. far above average, an eccentric not only in thinking but in appearance, dress, and behavior, a Bohemian, an egghead, a long-hair" (MacKinnon 1966, 152) or is introverted, unable to speak to others with lower intelligence, and emotionally unstable. MacKinnon et al. thus decided to ask the experts themselves: A small group of architects were asked to decide who, among their colleagues, were the most creative ones. Subjected to a variety of tests, the selected architects were found to have an IQ above average, a relative absence of repression and suppression as mechanisms for the control of impulse and anger, openness to experience, fuller access to their own experience, a capacity to record and retain and have available the experiences of their life history, an unwillingness to deny or repress things that are unpleasant or troubling, and a considerable amount of "psychic turbulence" (MacKinnon 1966, 154).

[2] This was the case in philosophy as well (e.g., Kant 1790/2000). See also Chapter 5, "Historical Treatments of Creativity in the Western Tradition," this volume.

C3P16 Two further and interesting findings were that this exclusively male group of people scored high on "femininity" (personality features that were considered "feminine" in the American culture) in the *Minnesota Multiphasic Personality Inventory* (Hathaway and McKinley 1943; see MacKinnon 1962, 488) and showed "a high incidence of distinctly autonomous mothers (. . .), who led active lives with interests and sometimes careers of their own apart from their husbands," and their families "tended to move more frequently, whether within a single community, or from community to community, or even from country to country" (MacKinnon 1962, 492).[3] MacKinnon concludes:

C3P17 > (. . .) the creative individual is an impressive person, and he is so because he has to such a large degree realized his potentialities. He has become in great measure the person he was capable of becoming. (MacKinnon 1962, 155)

C3P18 This quote makes it very clear that MacKinnon's approach is, while empirical, also evaluative from the beginning—culminating in admiration and praise of the creative subject. Humans who manifest creativity are artists or scientists to whom we owe credit for progress in society and science.

C3P19 Cultural psychologist Vlad Glăveanu (2014) notices this evaluative attitude in psychological creativity research and distinguishes the following paradigms. The "He paradigm" is concerned with creative geniuses; according to Glăveanu, it is "elitist," "essentialist," and political, since recognizing or not recognizing a genius is a politically charged matter. The fact that only male individuals were even tested in MacKinnon's study should be sufficient to show that MacKinnon's work falls into this category. The "I paradigm" then simply replaces the genius with the "normal" person (Glăveanu 2014, 30) and acknowledges the creativity of an ordinary scientist or the creativity of an average person. While the creativity of exceptional individuals, or eminent creativity, has been distinguished from everyday creativity for quite some time, everyday creativity has, until recently, comprised a wide range of instances of creativity: from the creativity of a schoolchild to the creativity of an amateur artist (see Kaufmann and Beghetto 2009, 2). Kaufman and Beghetto (2009) introduced the Four C Model of Creativity (see also Chapter 1, "Reclaiming the Creative Imagination," this volume), which allows for more fine-grained distinctions between the creativity of "geniuses" or Big-C and everyday creativity, which is now divided into Pro-c, little-c, and mini-c. While creativity is usually defined as the ability to produce a certain output judgable by others, the newly introduced category of "mini-c" (Beghetto and Kaufm it is something that deserves

C3P20 an 2007, 2) deviates from this definition as follows:

C3P21 > We define mini-c creativity as *the novel and personally meaningful interpretation of experiences, actions, and events.* (. . .) Importantly, the novelty and meaningfulness of these interpretations need not be original or (even meaningful) to others. Indeed, the judgment of novelty and meaningfulness that constitutes mini-c creativity is an intrapersonal judgment. (Beghetto and Kaufman 2007, 73)

C3P22 Little-c and Pro-c describe the creativity of "ordinary people." But not everyone moves on to the highest level of creativity or Big-C:

[3] Psychologists have also investigated how subjects develop the ability to create. Sternberg mentions a creative environment (Sternberg 2006); Mihály Csikszentmihalyi (1996) emphasizes that the subject has to be free from external and internal obstacles and threats to be motivated and able to focus on creating.

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> Some people may happily remain at the little-c level for their entire lives; others may advance in some areas and remain at the little-c in other areas (. . .). After many years have come and gone, the creator may achieve a lasting Big-C contribution to a field (e.g., the Nobel Prize) or the creator may have passed away, and history will make the final judgment as to whether he or she has entered the pantheon of Big-C or is long forgotten. (. . .) It is only the final stage, Big-C, a typically posthumous distinction, that is reserved for the elite few. (Kaufman and Beghetto 2009, 6)

C3P24 The last two quotes reveal several important points. First, there is still a strong evaluative aspect to the notion of creativity employed: The different levels of creativity are understood as something a creative person typically works through until, in rare cases, they reach the highest level. The highest level is measured by what science or society values most.

C3P25 Second, the distinctions show that psychologists nowadays aim to understand creativity as a broad phenomenon which has its roots in basic cognitive abilities, such as a general openness to new experiences and a willingness to explore (Kaufman and Beghetto 2009, 4). Robert Sternberg (2006) notes that a willingness to overcome obstacles, a willingness to take sensible risks, and a willingness to tolerate ambiguity, as well as self-efficacy, can be found in creative people (Sternberg 2006, 89). Creativity can be tested and developed in every person. A well-known tool to test creativity is the *Torrance Test of Creative Thinking*, which was developed by E. Paul Torrance in 1966. While today the test is mostly used to assess gifted children, Torrance's original aim was to understand and nurture qualities to enhance students' creativity (Kim 2006, 4). The test was revised several times, but it originally measured the following abilities: *fluency*, the ability to produce a large number of relevant ideas; *flexibility*, the number of categories used when solving a problem; *elaboration*, the ability to implement an idea in detail and high quality; and *originality*, the ability to produce ideas that are statistically rare (Torrance 1966).

C3P26 Third, creativity above mini-c is still seen as the achievement of an individual subject relating to the environment that acknowledges their achievement ("history will make the final judgment"). But, as Glăveanu notes, what counts as an achievement depends on the context in which it is acknowledged as such. This is why new ways of understanding creativity seem appropriate. The "We paradigm," introduced by Glăveanu, looks at creativity as a social phenomenon. It explains He- and I-creativity within the context of a society or culture, with society or culture as an essential contributor:

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> (. . .) a complex sociocultural-psychological process that, by working with "culturally impregnated" materials within an intersubjective space, leads to the generation of artifacts that are evaluated as new and significant by one or more persons or communities at a given time. (Glăveanu 2014, 30)

C3P28 Glăveanu summarizes the history of creativity research in psychology noticing that

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> (. . .) the origin of creative acts was initially external to the person and attributed to divine forms of intervention. Gradually, this influence was internalized and creative potential became the patrimony of individuals, a capacity explained in various ways, from heredity and mental illness to special personality traits and cognitive abilities. These explanations all point back towards the psychological characteristics of the person. In recent decades, this narrative was challenged by the reality of interconnectivity and expanded networks of collaboration. Even if creators—their genes, brains, and minds—remain important, creativity itself is gradually "relocated" to the in-between spaces of interaction and co-creation. (Glăveanu 2021, 48–49)

C3P30 From this brief and very selective sketch of psychological research on creativity, we can see that in psychology, research started out with a strong focus on exceptional creative subjects, but it has in the meantime expanded to everyday activities or processes as in mini-c and is, at least in cultural psychology, entering a new phase, in which the context plays an explanatory role. Both the scope of creativity and the explanatory means employed to account for the phenomenon have become broader.

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3.3 Tendencies in Philosophical Research

C3P31 I will now show that some tendencies we can observe in early psychological research are still prevalent in philosophical research on creativity: focus on *eminent or exceptional creativity* and focus on the *creative product*. Further, while interest in the *creative process* seems to be growing, the social or cultural—or, put more generally, the *contextual dimension of creativity*—has not received much attention.

C3P32 In philosophical research, we still see a focus on exceptional people, abilities, and products, that is, on creativity in the sense of Big-C. This is closely related to but doesn't follow from the inclusion of the value component in the standard definition given earlier (see section 3.1): If creativity implies a valuable product, it's natural to focus on highly valuable products. I will give three examples that point to the impact of the value component on creativity research: Matthew Kieran's (2014) idea of "exemplary" creativity as a virtue of character, James Grant's (2018) theory of creativity as an artistic merit, and Antti Kauppinen's (forthcoming) discussion of creativity and merit.

C3P33 Kieran is concerned with the question of what kind of achievement it is to be a creative person and whether it is more than just "to possess some kind of amazing capacity or skill" (Kieran 2014, 125). While there is a minimal sense in which people can be creative, namely when they produce novel and at least subjectively valuable or appropriate artifacts, there is an advanced form of creativity that occurs when these artifacts are created while being guided by mastery, control, and sensitivity to reasons (Carroll distinguishes between a descriptive and an honorific sense of the notion of creativity; see Carroll 2014, 68). But what really makes the difference, according to Kieran, is the motivation of the creator. Creative excellence involves being connected to the relevant internal values by the right kind of reasons through motivation. These reasons figure "in appropriate roles in guiding deliberation and activity towards the values internal to the relevant domain" (Kieran 2014, 135). Kieran claims that the exemplary creative person creates in this way "not as a matter of happenstance, but rather out of an ingrained disposition of character" (Kieran 2014, 142). "Exemplary creativity" is a virtue of character rather than a mere skill or capacity, and it is something that deserves praise (Kieran 2014, 128). Similarly, Stokes thinks that creativity is a value-laden concept, a "term of praise" like "progress," since it implies the value of the creative product (Stokes 2011, 2014). Paul and Stokes (2024) write: "Progress necessarily involves novelty or change, but we don't praise change as progress unless it's good change. Likewise, defenders of the value condition urge, creativity necessarily involves novelty, but we don't praise novelty as creative unless it's good novelty."

C3P34 Grant (2018) defends the idea that creativity or, in his words, "imaginativeness" is an artistic merit. Imaginativeness is primarily a way of thinking or coming up with something, but it can be displayed in an artwork: "imaginative things other than thinking are imaginative because of the imaginative thinking that went into them" (Grant 2018, 335). As a merit with final rather than instrumental value, artistic merit makes artworks good of their kind. To explain why imaginativeness is an artistic merit, Grant appeals to the excellence of the artist (manifesting in virtuousness and skillfulness of the artist). Examples of such creative

or imaginative artworks are Joyce's *Ulysses*, Gaudí's *Sagrada Familia*, and Blake's *Ghost of a Flea*.

C3P35 Kauppinen (forthcoming) starts out with what he labels "The Puzzle of Artistic Achievement": While merit and achievement usually involve effort and voluntary or rational control, creative products can be achievements and deserve admiration, even though they don't necessarily involve either. What is involved in creating, according to Kauppinen, is spontaneous agency. The artist sets an aspirational aim, which they then realize through perceiving and conceiving of possibilities. A new and valuable product occurs through a spontaneous act. While the lack of exercise of spontaneity doesn't deserve disapproval, the successful employment of spontaneity in creativity does deserve admiration.

C3P36 We can observe that, even when theories of creativity are not explicitly concerned with Big-C only, the examples of creative people used in the literature are those of exceptionally creative people. Hills and Bird (2018) include Darwin, Beethoven, Kafka, and Monet; Kauppinen's examples include Duchamp and Picasso. Other examples often used are Da Vinci, Einstein, Mozart, and Henry James. Artistic and scientific "geniuses" are looked at as paradigm examples of creative people. While their work may be uncontroversially valuable, using established scientists and artists as examples conveys the idea that creativity is rare and inherently related to excellence, and that creative engagement necessarily requires a highly valuable product. Paul Guyer (2003) seems to express that there is a particular value to studying the artistic "genius." In motivating his philosophical endeavor on eminent or exemplary originality in Kant and John Stuart Mill, he writes that, while his interest is mainly historical, "it is of course motivated by the belief that Kant and Mill jointly provide an analysis of both the costs and the benefits of genuine artistic innovation and individuality that is worth remembering in an age of perpetual revolution in the arts" (Guyer 2003, 116). Referring to artistic and scientific "geniuses" as paradigm examples has an impact on which aspects of creativity we think are worth highlighting, describing, and explaining.

C3P37 The link between the creative product and the idea of the creative person as a "genius" certainly lies in the value of the product. What makes artistic and scientific geniuses particularly clear examples and thus ideal subjects of study is that we can detect their creativity in the exceptionally valuable products they have generated. I will now present two examples from the philosophical literature that show that the product can play a different role as well: Hills and Bird's idea that creativity doesn't necessarily include a valuable product and Margaret Boden's (2010) definition of creativity.

C3P38 Something that is new and valuable is so within a system—a culture, a tradition, a way of doing things—or more generally, a context. Hills and Bird (2018) emphasize that even where tradition is being rejected, the rejection can only be made sense of in contrast to a tradition. The context thus gives the framework within which there can be meaningful and nonmeaningful novelty, and only meaningful novelty can be valuable novelty. However, the way the creative subject and the process are often characterized suggests that creativity as opposed to originality crucially has to do with the value of the product. Hills and Bird argue that even prudential (i.e., subjective) value (as opposed to objective value) is not necessary for creativity, and creativity is not conducive to value. They thus seem to aim at an explanation of the relation between a certain mental process and originality in the product, which only contingently is valuable.

C3P39 Margaret Boden prominently endorses the definition introduced earlier and distinguishes different ways in which an idea or artifact is new—and, according to her, also surprising—and valuable: *combinatorial creativity*, *exploratory creativity*, and *transformational creativity* (see Chapter 1, "Reclaiming the Creative Imagination," this volume). Boden thereby seems to suggest that the way we are surprised by a product corresponds to the way in which an idea or

artifact is, in fact, new and to the way in which an idea is produced (see Paul and Stokes 2024. Her approach to the process of creating is functionalist: The product is supposed to inform us about the process (see Nanay 2014).

C3P40 Note that neither is necessarily the case. Different kinds of surprise may be epistemically helpful but unreliable in detecting different kinds of creativity, for instance because what we are surprised by depends on contingent psychological facts such as what we have been exposed to, maybe also how often we have been exposed to it, and what we remember. Further, it's possible that all three kinds of creativity can be reduced to one single kind of process—for instance, to combining ideas in a new way (see Kind 2022). The three kinds of creativity are thus primarily and maybe exclusively ways in which a creative product can be judged to be new, surprising, and valuable.

C3P41 We saw that the highly valuable product seems to have served to detect and study creativity. But we can see two further ways in which the product plays a role in the explanation of creativity. According to Hills and Bird, a product is necessary for there to be creativity, but this product doesn't necessarily have to have value. In the case of Boden, the way in which a product is novel is supposed to determine the kind of process behind the creation of this product.

C3P42 As noted earlier, interest in the creative process seems to be growing. But not much work has been done yet concerning the phenomenology of creating, or the role imagination can take in creative processes. I will look at two different approaches here: Bence Nanay's (2014) account of the creative process, on the one hand, and Gaut's (2003), Michael Beaney's (2005), and Noël Carroll's (2014) views of the role of imagination in creativity (see also Chapter 10, "The Relationship Between Imagination and Creativity," this volume), on the other.

C3P43 Nanay provides steps toward an experiential account of the creative process. He distinguishes between originality as a feature of the product and creativity as a feature of the mental process of creating. A creative act, according to him, need not have an original output, and a creative output can be produced noncreatively. For instance, we can solve a mathematical problem creatively, but there's nothing original about the solution. Or a scientist may accidentally invent an original product. Nanay then proceeds to distinguish creative mental processes from noncreative ones by the way we experience these mental processes. Nanay claims that "in order to capture some of the crucial features of creative processes, we need to analyze them on the experiential level" (Nanay 2014, 24). Nanay gives the following necessary and sufficient condition: "a mental process is creative if and only if it produces an idea that is veridically experienced as something we have not thought to be possible before and as something we have not learned from someone else" (Nanay 2014, 24). Nanay helpfully lists three features a theory of creativity should explain: (1) why we think that creativity is something that happens to us, rather than something we do; (2) why the experience of appreciating other people's creativity can seem similar to the experience of one's own creativity; and (3) why we take creative actions as genuine actions as opposed to mere bodily movements (Nanay 2014, 26–27). Nanay claims that having an idea that seemed impossible a moment before explains (1) and (2) equally well. What explains (3) is simply that we experience creativity as an action.

C3P44 Gaut distinguishes two models of the role of imagination in creativity. According to the first, *the display model*, imagination just displays the result of the creative process, while the source of creativity must be a different mental capacity. According to second, *the search model*, imagination can be used to try out various possibilities in being a vehicle of creativity rather than just displaying it. Beaney adds a third model, *the connection model*, which assigns imagination the role of connecting different ideas (Beaney 2005, 201–202). Only if

we understand the role of imagination as connecting ideas in a new and valuable way can we give an explanation in terms of imagination as a source of creativity.

C3P45 In "The Creative Audience," Carroll notices that creativity in the arts has focused on the creativity of the artist and argues that an audience's response to fictional artworks can be creative as well. He distinguishes various kinds of imaginative activities that are involved in an audience's engagement with a fictional artwork. "Exploratory imagination" is the process of exploring aesthetic objects; for example, metaphors, "fictive imagination" refers to our capacity to think counterfactually and to propositionally imagine what is true in the fiction. When we engage in "elaborative imagination," we fill in what is not explicitly stated in the novel: facts about geography, history, physics, and psychology. Further, when we simulate fictional mental states of fictional characters, we "constructively" imagine when we predict what will happen next or connect the past with the present within the artwork, and we engage in "thematic imagination" when we go beyond the artwork and think about how aspects of it relate to a theme, concept, or purpose. Carroll concludes that "the creative activities of these imaginations are elicited by the vast majority of narrative artworks, and that, as a result of this, the success of most narrative artworks depends on the creative contribution of readers, listeners, and/or viewers" (Carroll 2014, 80). Focus on the artist "encourages neglect of the audience's creative share in making the fictional artwork function" (Carroll 2014, 62).

C3P46 Similarly, mathematician Jacob Bronowski (1985) claims that any appreciation of a creative act is a re-creation, even if it doesn't come with the same intensity:

C3P47 > In my view, the appreciation of art or mathematics or any creative act is an act of re-creation. (. . .) you in your modest way are re-creating. You re-live the act of creation and that is why (in my view) appreciation is (. . .) an activity of the same kind as the original act of creation even though it is lower in intensity. (Bronowski 1985, 248)

C3P48 For Nanay, a newly created product at the end of it is necessary for a process to count as creative. For Carroll and Bronowski, it is sufficient to re-create a product that others have created. However, we could also look at the creative process independently of any product; that is, there could be a particular mental process we label "creative" because sometimes it leads to a new idea or artifact that we can share and that others can appreciate. I will suggest what such a process could look like in the last section.

C3S4 3.4 Product Creativity and Process Creativity

C3P49 How may philosophy contribute in a distinctive way to creativity research in the future? In this section, I will suggest that we can focus on two main aspects of creativity independently—without aiming to explain all aspects with one and the same theory. Elsewhere (Langkau 2022), I have argued that the concept of creativity should be treated like the concept of empathy. While empathy often leads to moral or helping behavior, it doesn't *necessarily* lead to such behavior. Sometimes we feel with a person, but we don't act on our feeling. Hence, a theory of empathy doesn't need to take into account moral or helping behavior. Similarly, a theory of the creative process shouldn't need to depend on a novel and valuable product at the end of the process. Just like we have separate theories of moral behavior, we can give a separate account of what makes a product creative: its novelty and its value within a certain context. Kieran's case of the painter who accidentally paints a new and valuable piece of art is then no longer a problem: A product can be creative independently of how it was produced (see also Gaut 2014, 270). Similarly, we can come up with new and valuable creative products in a mechanic, noncreative way.

C3P50 Of course, we shouldn't take such a step without good reasons: Ideally, there would be only one concept of creativity. Paul and Stokes note the challenge in taking a "pluralistic approach": "The trick, though, will be to give principled reasons for multiplying different concepts of creativity so that the analyses do not simply reduce to saying that anything goes" (Paul and Stokes 2024). I will now briefly present two reasons to support distinguishing a concept of the creative process from a concept of the creative product (see Langkau 2022): first, new challenges posed by AI and, second, intercultural differences in our thinking about creativity.

C3P51 New challenges in the domain of creativity give us good reasons to separate criteria of creativity for products from the nature of the creative process. AI processes are confronting us with artworks and inventions indistinguishable from ideas and artifacts created by humans, yet they lack crucial aspects that seem necessary concerning human creativity (see Chapter 37, "Imagination, Creativity, and Artificial Intelligence," this volume). One way to avoid the question of whether AI processes can *really* be creative is to simply accept that their products can be creative independent of how they were produced. The products can be new, surprising, and valuable. We can then, in a derived way, speak of AI processes as creative insofar as something creative is the result of such processes (Langkau 2022).

C3P52 Movement away from the idea that creative products must be brought about in a specific way can be found in the history of American patent law, as presented by Ryan Abbott (2016). Abbott argues that computer programs should be considered inventors under the Patent and Copyright Clause of the US Constitution, given that they can already generate patentable output and thus meet the requirements of being inventors. However, computer programs are currently not recognized as inventors. For about a decade until 1952, the law contained the so-called Flash of Genius doctrine, which said that in order to be patented, a new invention "must reveal the flash of creative genius, not merely the skill of the calling" (quoted from Abbott 2016, 1108). Rather than as a "result of long toil and experimentation" (Abbott 2016, 1108), an invention must have occurred through a specific mental process, namely a "flash of genius." Unsurprisingly, this doctrine was too difficult to implement and was hence abolished.

C3P53 To prevent nonhuman creators from producing patentable products, the Copyright Office published an updated "Human Authorship Requirement," which states:

C3P54 > To qualify as a work of "authorship" a work must be created by a human being. [. . .] The Office will not register works produced by nature, animals, or plants. [. . .] Similarly, the Office will not register works produced by a machine or mere mechanical process that operates randomly or automatically without any creative input or intervention from a human author. (quoted from Abbott 2016, 1099–1100)

C3P55 However, Abbott thinks that patent law should be completely indifferent to how an invention came about, which would allow computers to be included as inventors: "patentability of computational inventions should be based on the inventiveness of a computer's output rather than on a clumsy anthropomorphism because [. . .] patent law should be interested in a functionalist solution" (Abbott 2016, 1111). This is quite intuitive. Since we often cannot even track the exact way we ourselves come up with a new idea, there shouldn't be any requirements on our mental processes relevant to the patent office. But if there are no requirements on our mental processes, there shouldn't be any requirements on the processes of a computer program. For the patent office, the distinction between human and computer innovation or creativity thus shouldn't be based on the mental process (though maybe there are other reasons why AI-generated products shouldn't qualify for patents). This points in the direction I envisage: We should distinguish between creative products, which can be brought about by

humans and computer programs, and creative processes, which should interest us as essentially human creative processes.

C3P56 Susannah Paletz and colleagues (2011) look into the concept of creativity in different cultures, mainly in East Asian and Caucasian North American individuals. Their study of implicit theories of creativity suggests that we should distinguish between two different ways of attributing creativity. Basing their assumption on different attribution styles across cultures (Hofstede 1980), they predicted that there would be two different ways of attributing creativity, one that emphasizes "reflection, states of being and inner experience, intuition, thinking, and high levels of self-awareness," and one that focuses on external aspects such as visible products (Paletz et al. 2011, 85). They further predicted that East Asians were more likely to emphasize external factors in creativity, and North Americans were more likely to emphasize internal factors (Paletz et al. 2011, 86). Both tendencies of attribution were confirmed, which, of course, doesn't imply that we can strictly separate two different uses of "creativity" in East Asians and North Americans. However, it might give us reasons to think that there are two different concepts, one applying to a mental process and one to a product, and that participants in the study sometimes applied the one and sometimes the other.

C3P57 If we endorse the idea of two different notions of creativity, we can accept the broad bipartite definition I mentioned earlier—but only for "Product Creativity":

C3P58 1. *Product Creativity* is the ability of a subject to generate an idea or artifact that's new and valuable, significant or useful.

C3P59 In the remainder of this section, I will briefly outline what an account of the creative process, or "Process Creativity," could look like.

C3P60 Quite a lot has been said about the epistemic role of the imagination in the current literature (see, e.g., Kind and Kung 2016; Badura and Kind 2021), but not much about its creative use. We have seen that Gaut and Beaney suggest different models of what the role of imagination is in creating: The imagination could display ideas, search for ideas, or connect different ideas. I have suggested elsewhere (Langkau forthcoming) that we should think of these three conditions as functions the imagination can take in a creative process rather than as different models, of which only one can be correct. The display function says that we attend to what is being presented or represented through our senses, in memory, in thought, or in the imagination. We then manipulate what is being presented or represented and build connections to other representations, often within constraints, which accounts for the connection function. Kauppinen speaks of perceiving and conceiving of possibilities or affordances (see earlier). Gaut notes that a painter may suddenly have an image of the finished painting in mind, "but much of the subsequent work will involve scrutinising the painting as it is being made, imagining how it could be improved by altering it in various ways, trying out these changes, observing the results, making more alterations, and so forth" (Gaut 2003, 157). The creative process on paper may thus lead far away from the first image of the painting or the first idea of the poem. Further, it is common to assume that in creative processes, we search for a valuable product. Kauppinen speaks of an aspirational goal. I have suggested we search for value in the attending to, manipulating, and building of connections between representations and in its products, but not necessarily of the product (Langkau forthcoming). Rather than searching, as in a problem-solving process, to achieve a certain goal, I think that we search for value in the process itself. This idea may be similar to how Edward Halper interprets Nietzsche's view of creativity:

C3P61 The creative act is always intrinsically good. Its value does not depend on either what it produces or what it overthrows. Creativity is good for its own sake. Accordingly, creative acts are neither motivated by reason nor evaluated by rational standards. (Halper 1989, 47)

C3P62 The way we experience the value in the creative process could be through emotions (see Noordhof 2008; see Chapter 14, "Imagination, Creativity, and Emotion," this volume). Boden writes that "(. . .) creativity in the arts is often associated with deep, and deeply personal, emotions. A poet's or architect's grief at losing a lover may inspire a masterpiece that's admired for hundreds of years" (Boden 2014, 35). Importantly, if the creative process itself is valuable, we can explain why we think creative activities can contribute to a good life, and why we think it is important to teach children to be creative, even if we don't expect them to produce Pro-C- or Big-C-level creative products. In fact, once we define the three functions of the imagination in creativity, we can speak of process creativity whenever they are at work, regardless of whether there's a product at the end of this process. And this includes processes of re-creation as Bronowski suggests (see earlier).

C3P63 A further question is whether creative processes in the sciences and problem-solving processes share basic features with artistic creative processes. According to Bronowski, the difference between the arts and the sciences does not lie in the act of creating, but rather in the act of re-creating. While we rediscover scientific theories when understanding them in the same way they were created, we do not re-create works of art in this way:

C3P64 You explore your own experience; you learn: you live; you expand inside. (. . .) the difference between the arts and the sciences lies not in the process of creation, but in the nature of the match between the created work and your own act of recreation in appreciating it. (Bronowski 1985, 248)

C3P65 Clearly, much more must be said about the function of imagination in creative processes, about the value of the creative process, and about its phenomenology. The most important message of this very brief sketch is that we should study the creative use of imagination independently from the creative product.

C3S5

3.5 Conclusion

C3P66 I have shown that the phenomenon of creativity consists of various aspects: the creative subject, the creative process, and the creative product. While research in psychology is slowly shifting focus to a wider scope of creative subjects and on creativity as a social or cultural phenomenon, research in philosophy is still, more or less, taking place within the "He paradigm," in which the creative product plays a major role. There is, however, some focus on the creative process, and this tendency seems to be growing. I have suggested that, to properly account for the phenomenology as well as the function and value of the creative process, we need to separate it from the creative product. This, I take it, is the best way of reaching phenomenal and normative accuracy in creativity research. Just as we are interested in empathy as a mental state or process, on the one hand, and in helping or moral behavior, on the other hand, we should look at Product Creativity and Process Creativity separately.[4]

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