

The Philosophy of Creativity



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New Essays

EDITED BY ELLIOT SAMUEL PAUL
and
SCOTT BARRY KAUFMAN

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To my mother, Eugenia Jeanilia Paul, with the greatest love and gratitude for being the very model of wisdom, grace, and creativity—and for teaching me to read.

—ESP

To two of my best friends, Elliot Samuel Paul and Benjamin Irvine, who have deepened my appreciation for the value of philosophy.

—SBK



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PART ONE

INTRODUCTION





Introducing *The Philosophy of Creativity*

ELLIOT SAMUEL PAUL AND SCOTT BARRY KAUFMAN

There is little that shapes the human experience as profoundly and pervasively as creativity. Creativity drives progress in every human endeavor, from the arts to the sciences, business, and technology. We celebrate and honor people for their creativity, identifying eminent individuals, as well as entire cultures and societies, in terms of their creative achievements. Creativity is the vehicle of self-expression and part of what makes us who we are. One might therefore expect creativity to be a major topic in philosophy, especially since it raises such a wealth of interesting philosophical questions, as we will soon see. Curiously, it isn't.

To be sure, some of the greatest philosophers in history have been taken with the wonder of creativity.¹ To name just few examples: Plato has Socrates say, in certain dialogues, that when poets produce truly great poetry, they do it not through knowledge or mastery, but rather by being divinely “inspired”—literally, breathed into—by the Muses, in a state of possession that exhibits a kind of madness.² Aristotle, in contrast, characterized the work of the poet as a rational, goal-directed activity of making (*poesis*), in which the poet employs various means (such as sympathetic characters and plots involving twists of fate) to achieve an end (of eliciting various emotions in the audience).³ Kant conceived of artistic genius as an innate capacity

¹ Or what we now call “creativity.” According to some scholars, that abstract noun did not exist in European languages until the 19th century—but the phenomenon, and interest in it, certainly did. (See, e.g. Władysław Tatarkiewicz, *A History of Six Ideas: An Essay in Aesthetics* (The Hague, NL: Martinus Nijhoff, 1980), esp. chapter 8.) For other discussions of the complex history of terms and concepts associated with creativity, see, e.g., Darrin M. McMahon, *Divine Fury: A History of Genius*. Perseus Books Group, 2013; Murray, Penelope, ed. *Genius: The history of an idea*. New York: Basil Blackwell, 1989; Milton Charles Nahm, *Genius and Creativity: An Essay in the History of Ideas*. Harper & Row, 1965.

² Plato, *Ion* and *Phaedrus*, in *The Complete Works of Plato*, eds. John M. Cooper and D. S. Hutchinson (Hackett Publishing, 1997). Cf. Elizabeth Asmis, “Plato on Poetic Creativity,” in *The Cambridge Companion to Plato*, ed. Richard Kraut (Cambridge University Press, 1992).

³ Aristotle, *Poetics*, in *The Complete Works of Aristotle: The Revised Oxford Translation*, vol. II, ed. Jonathan Barnes (Princeton University Press, 1984). For a sophisticated defense of the Aristotelian



to produce works of “exemplary originality” through the free play of the imagination, a process which does not consist in following rules, can neither be learned nor taught, and is mysterious even to geniuses themselves.⁴ Schopenhauer stressed that the greatest artists are distinguished not only by the technical skill they employ in the production of art, but also by the capacity to “lose themselves” in the experience of what is beautiful and sublime.⁵ Nietzsche saw the greatest feats of creativity, exemplified in the tragic poetry of ancient Greece, as being born out of a rare cooperation between the “Dionysian” spirit of ecstatic intoxication, which imbues the work with vitality and passion, and the “Apollonian” spirit of sober restraint, which tempers chaos with order and form.⁶ This is just the barest glimpse of what each of these philosophers had to say about creativity, and many other figures could be added to their number.

Nevertheless, while some of the topics explored by earlier thinkers have come to occupy a central place in philosophy today—such as freedom, justice, consciousness, and knowledge—creativity is not among them. Philosophy has seen some very important work on creativity in the last few decades,⁷ but not nearly at the rate that we see for subjects of comparable range and importance. Indeed, “the philosophy of creativity” is still a neologism in most quarters—just as, for example, “the philosophy of action” and “the philosophy of music” were not too long ago.

In contrast, psychology has seen a definite surge of interest in creativity. In 1950, J. P. Guilford gave a presidential address at the American Psychological Association calling for research on the topic.⁸ And the field soon took off with waves of research investigating the traits and dispositions of creative personalities; the cognitive and neurological mechanisms at play in creative thought; the motivational determinants of creative achievement; the interplay between individual and collective creativity; the range of institutional, educational, and environmental factors that enhance or inhibit creativity; and more. Today, the blossoming of this field can be seen in the flurry of popular writing reporting on its results⁹; an official division of the American

idea that the creative process is fundamentally rational, see Gaut, Berys. “Creativity and Rationality.” *The Journal of Aesthetics and Art Criticism* 70, no. 3 (2012): 259-270.

⁴ Immanuel Kant, *Critique of the Power of Judgment*, eds. Eric Matthew and Paul Guyer (New York: Cambridge University Press, 2001), pp. 43–50

⁵ Arthur Schopenhauer, *The World as Will and Representation*, vols. I and II, trans. E. F. J. Payne (New York: Dover, 1969). See vol. I, pp. 184–194, and vol. II, pp. 376–402.

⁶ Friedrich Nietzsche, *The Birth of Tragedy and Other Writings*, eds. Raymond Geuss and Ronald Speirs (Cambridge University Press, 1999).

⁷ Samples of this work can be found in these two collections: Michael Krausz, Denis Dutton, and Karen Bardsley, *The Idea of Creativity* (Boston: Brill, 2009); and *The Creation of Art: New Essays in Philosophical Aesthetics*, eds. Berys Gaut and Paisley Livingston (New York: Cambridge University Press, 2003).

⁸ J. P. Guilford, “Creativity,” in *American Psychologist* 5 (1950), pp. 444–454.

⁹ See, e.g., the psychology section of *The Creativity Post*: <http://www.creativitypost.com/psychology>.



Psychological Association on the psychology of aesthetics, creativity, and the arts (Division 10); numerous academic conferences; multiple peer-reviewed journals¹⁰; several textbooks¹¹; and a growing number of undergraduate and graduate courses all devoted to the psychology of creativity. According to one historical overview, creativity has been studied by nearly all of the most eminent psychologists of the 20th century, and “the field can only be described as explosive.”¹²

The swell of interest in the science of creativity is an inspiring example for the philosophy of creativity, but more importantly, it offers a resource that philosophers should be mindful of as they pursue this effort. Unfortunately, philosophers writing on creativity have sometimes tended to ignore the scientific literature. In some cases, they have gone so far as to claim—after citing just a few studies—that creativity is by its very nature unpredictable and therefore beyond the scope of science.¹³ Although the question of whether creativity is explicable is a philosophical question, it is not one that is impervious to empirical work. After all, anyone who declares from the armchair that something cannot be explained is liable to be refuted in the event that researchers do find ways to uncover explanations. The question of whether creativity can be explained empirically is itself, at least partly, an empirical question.

In fact, a number of issues arise at the nexus between philosophy and psychology and are handled best with contributions from both. This interdisciplinary approach is embraced by a new school of creativity researchers who are part of much broader trend toward dialogue and collaboration between scientifically-minded

¹⁰ *Psychology of Aesthetics; Creativity and the Arts; Creativity Research Journal; Journal of Creative Behavior; International Journal of Creativity and Problem Solving.*

¹¹ J. C. Kaufman, *Creativity 101* (New York: Springer, 2009). K. Sawyer, *Explaining Creativity: The Science of Human Innovation*, 2nd ed. (New York: Oxford University Press, 2012). R. W. Weisberg, *Creativity: Understanding Innovation in Problem Solving, Science, Invention, and the Arts* (New York: Wiley, 2006).

¹² Robert S. Albert and Mark A. Runco, “A History of Research on Creativity,” in *Handbook of Creativity*, ed. Robert J. Sternberg (Cambridge, UK: Cambridge University Press, 1999), pp. 16–31 at p. 17.

¹³ Paul Feyerabend, “Creativity—A Dangerous Myth,” in *Critical Inquiry* 13, no. 4 (1987), pp. 700–711; Carl R. Hausman, “Criteria of Creativity,” in *The Concept of Creativity in Science and Art*, eds. Denis Dutton and Michael Krausz (Amsterdam: Springer, 1985), pp. 75–89. Carl R. Hausman, *A Discourse On Novelty and Creation* (Albany, NY: SUNY Press, 1975). I. C. Jarvie, “The Rationality of Creativity,” in *The Concept of Creativity in Science and Art*, eds. Denis Dutton and Michael Krausz (Amsterdam: Springer, 1985), pp. 109–128. John Hospers, “Artistic Creativity,” in *The Journal of Aesthetics and Art Criticism* 43, no. 3 (1985), pp. 243–255. For more optimistic perspectives, see Dustin Stokes, “Incubated Cognition and Creativity,” in *Journal of Consciousness Studies* 14, no. 3 (2007), pp. 83–100. Larry Briskman, “Creative Product and Creative Process in Science and Art,” in *Inquiry* 23, no. 1 (1980), pp. 83–106; and Maria Kronfeldner, “Creativity Naturalized,” in *The Philosophical Quarterly* 59, no. 237 (2009), pp. 577–592.

philosophers and philosophically-minded scientists.¹⁴ And the essays in this volume illustrate numerous ways in which the exchange can be fruitful, as philosophers draw on scientific research and scientific work is informed by philosophical perspectives. Below, we present a bird's-eye view of these chapters and the themes and issues they explore.¹⁵

The Concept of Creativity

Perhaps the most fundamental question for any study of creativity, philosophical or otherwise, is *What is creativity?* The term “creative” is used to describe three kinds of things: a *person*, a *process or activity*, or a *product*, whether it is an idea in someone's mind or an observable performance or artifact. There is an emerging consensus that a product must meet two conditions in order to be creative. It must be *new*, of course, but since novelty can be worthless (as in a meaningless string of letters), it must also be *of value*. (Researchers sometimes express this second condition by saying a product must be “useful,” “appropriate,” or “effective.”)¹⁶ This definition is anticipated, in a way, by Immanuel Kant, who viewed artistic genius as an ability to produce works that are not only original—“since there can be original nonsense”—but also “exemplary.”¹⁷

¹⁴ For reflections on different trends in this movement, see Jesse Prinz, “Empirical Philosophy and Experimental Philosophy,” in *Experimental Philosophy*, eds. Joshua Knobe and Shaun Nichols (New York: Oxford University Press, 2008); and “Introduction: Philosophy and Cognitive Science” in *The Oxford Handbook of Philosophy of Cognitive Science*, eds. Eric Margolis, Richard Samuels, and Stephen P. Stich (New York: Oxford University Press, 2012), pp. 3–18. The chapters of this handbook explore connections between philosophy and cognitive science on various topics. The integration is especially pronounced in research on such topics as color perception (e.g., Alex Byrne and David R. Hilbert, “Color Realism and Color Science,” in *Behavioral and Brain Sciences* 26, no. 1 [2003], pp. 3–21) and causal cognition (e.g., Tania Lombrozo, “Causal-Explanatory Pluralism: How intentions, functions, and mechanisms influence causal ascriptions,” in *Cognitive Psychology* 61, no. 4 [2010], pp. 303–332).

¹⁵ For another survey of the field, see Berys Gaut, “The Philosophy of Creativity,” in *Philosophy Compass* 5, no. 12 (2010), pp. 1034–1046.

¹⁶ Notable exceptions to this view include Dustin Stokes, “Minimally Creative Thought,” in *Metaphilosophy* 42, no. 5 (2011), pp. 658–681; and Mark A. Runco, “Parsimonious Creativity and its Measurement,” in *Measuring Creativity: Proceedings of European Council Meeting On Creativity and Innovation*, ed. E. Villalba (Luxembourg: Publications Office of the European Union, 2010), pp. 393–405, who argue that (at least for certain purposes) it's best to work with a more minimal conception of creativity that involves novelty but doesn't require value. There may also be *additional* requirements. It has been argued, for example, that in order for a product to count as creative, it must be surprising (Novitz; Boden), or produced intentionally (Gaut), or in a non-mechanical fashion with flair (Gaut).

¹⁷ Immanuel Kant, *Critique of the Power of Judgment*, eds. Eric Matthew and Paul Guyer (New York: Cambridge University Press, 2001), pp. 43–50. See also Paul Guyer, “Exemplary Originality: Genius, Universality, and Individuality,” in *The Creation of Art*, eds. Berys Gaut and Paisley Livingston (New York: Cambridge University Press, 2003), pp. 116–137.

In chapter 1, Bence Nanay argues that creativity is primarily an attribute not of products, but of mental processes. Some have suggested that what makes a mental process creative is the use of a certain kind of functional or computational mechanism, such as the recombination of old ideas or the transformation of one's conceptual space. Against this view, Nanay offers what he calls an experiential account of creativity. He contends that what is distinctive about the creative mental process is not any functional/computational mechanism, but the way in which it is experienced. In particular, the process yields an idea that the creator experiences as one she hadn't taken to be possible before.

Aesthetics and Philosophy of Art

One might suppose that if creativity has been understudied in philosophy at large, this couldn't be so when philosophers are focused on art in particular. Art was long thought to have a monopoly on human creativity¹⁸; it is still the paradigm of a creative domain, as "creative" is sometimes used more or less as a synonym for "artistic" and, at least in modern times, artists are disparaged when seen as derivative and praised for originality. But while the philosophy of art has been concerned with such issues as the definition, interpretation, and ontology of art, it has tended not to reflect on the artist *as a creator*, or the artist's labors *as a creative process*, or the work of art *as an expression of creativity*. Thus Gaut and Livingston observe that "[a]lthough the creation of art is a topic that should be a central one for aesthetics, it has been comparatively neglected in recent philosophical writing about art."¹⁹

Gregory Currie brings the issue of creativity to the fore in chapter 2, where he examines the popular idea that eminently creative works of literature provide insight into the workings of the human mind. Many advocates of this view write as if its truth were self-evident. Currie suggests that it is not, that indeed there is little evidence in its favor, and he considers how the claim might be tested. Recent experimental studies by Oatley and colleagues look promising in this regard, but Currie suggests that their results so far provide very weak evidence at best. In the absence of better evidence, Currie puts a new spin on the debate by emphasizing the *creativity* that goes into producing such great works of fiction. Are there aspects of literary creativity that should reliably lead to insights about the mind? He considers two such aspects—the institutions of literary production and the psychology of literary

¹⁸ Władysław Tatarkiewicz, *A History of Six Ideas: An Essay in Aesthetics* (The Hague, NL: Martinus Nijhoff, 1980), esp. chapter 8.

¹⁹ Berys Gaut and Paisley Livingston, "Introduction: The Creation of Art: Issues and Perspectives," in *The Creation of Art: Issues and Perspectives*, eds. Berys Gaut and Paisley Livingston (New York: Cambridge University Press, 2003), p. 1.

creativity—and suggests that in both cases, there are some grounds for thinking that literary creativity is not reliably connected with the production of insight.

Noël Carroll brings another dimension of creativity into view in chapter 3. Although he agrees that we should attend to the creative activities of the artist, he suggests that we should also acknowledge the contribution of the *audience*. For in order for the artist to accomplish the effects to which she aspires, Carroll argues, the audience must creatively cooperate with what the artist has initiated. He explores how audiences co-create artworks through the play of imagination. Rather than treating the imagination as if it were a single monolithic phenomenon, however, he identifies and analyzes several different imaginative activities that are engaged in response to a variety of artworks, such as reasoning counterfactually, filling-in unspecified content, constructing story-worlds around fictional objects, mentally simulating characters' experiences and points of view, and freely devising and playing with different meanings, interpretations, and unifying themes. By means of these activities, Carroll suggests, it is ultimately the audience's contribution that makes a work of art "work."

In chapter 4, Christopher Peacocke raises interesting questions for aesthetics that bear upon the study of creativity. While philosophers have long debated the question of what makes something a work of art, Peacocke asks: What makes a work an example of a particular *artistic style*? He suggests that answering this question is a precondition for research on creativity in musical composition. Just as researchers who study perception understand that we cannot account for how the content of a perception is computed without specifying what the content is, Peacocke suggests that we cannot explain how a composer creates in his particular style unless we identify what is distinctive about that musical style. Using the example of the Romantic style of music, Peacocke's approach draws on the perception of expressive action in combination with an account of what is involved in hearing emotion and other mental states in music. The account can link the phenomenology of musical perception with the ideas and ideals of the Romantic movement. He notes that by changing various parameters in the account, we can explain what is variously distinctive about impressionist music, expressionist music, and some neoclassical composing in the style of Stravinsky.

Ethics and Value Theory

One thing that makes creativity such a gripping topic is that we cannot fully understand ourselves without taking it into account. Creativity seems to be linked to our very identity; it is part of what makes us who we are both as human beings and individuals. With regard to the latter, each of us can ask, "What makes me who I am (as an individual)?" and we might wonder whether the answer has something to do with creativity.

According to an ancient and still influential view, the self (one's life) is some kind of dramatic or artistic performance. Exploring this idea in chapter 5, Owen Flanagan notes that there are metaphysical and logical questions about whether and how self-creation and self-constitution are possible. But he points out that there are also normative questions associated with the idea that life is a performance and the self is something that both emerges in and is constituted by that performance. Are there norms or standards that apply to self-constituting performances, and if so, what are they? Flanagan examines three contemporary psychopoetic conceptions of person—"day-by-day persons," "ironic persons," and "strong poetic persons"—in order to explore potential normative constraints on "performing oneself." Flanagan's provocative paper has implications for a number of diverse views in philosophy and psychology, from Jerome Bruner's narrative theory of "self-making stories" to David Velleman's paradox of self-constitution.

In chapter 6, Matthew Kieran asks what it is to be a creative person, and whether it involves a kind of virtue or excellence of character. He notes that there is a minimal sense according to which being creative means nothing more than having the ability to produce novel and worthwhile artifacts. Yet, he argues, there is a richer sense of the term that presupposes agential insight, mastery, and sensitivity to reasons in bringing about what is aimed at. A stroke victim who reliably produces beautiful patterns as a byproduct of his actions is not creative in the richer sense in which an artist who aims to produce them and could have done so differently is. Is creativity in this richer sense ever more than just a skill? In the light of suggestive empirical work, Kieran argues that motivation is central to exemplary creativity. Exemplary creativity, he argues, involves intrinsic motivation and is a virtue or excellence of character. We not only praise and admire individuals whose creative activity is born from a passion for what they do but, other things being equal, we expect them to be more reliably creative across different situations than those who are extrinsically motivated. This is consistent with the recognition that intrinsic motivation is not required to be creative and people's creative potentials differ. Creativity in people will flourish when intrinsic motivation is foregrounded, with the relevant values and socioeconomic structures lining up appropriately. It tends to wither when they do not (unless a person's creativity, like Van Gogh's, is exceptionally virtuous).

Philosophy of Mind and Cognitive Science

In chapter 7, Simon Blackburn briefly remarks on the history of the idea—voiced by Plato, echoed by philosophers and artists in the Romantic tradition, and still present in the popular imagination—that creativity involves something mystical or supernatural. Against this notion, Blackburn draws on findings of modern psychology to offer a tamer view. He argues that even the most extraordinary creative achievements are the result of ordinary cognitive processes.

In chapter 8, Dustin Stokes ventures to clarify exactly what the relation is between creativity and imagination. In his view, imagination is important for even the most minimally creative thought processes. This would be a pointless tautology if “imagination” just means (the capacity for) creativity. The key, then, is to identify what imagination is such that it is *not* the same thing as creativity but still essential for it nonetheless. As Stokes notes, few philosophers have thought through the distinction between imagination and creativity, and few psychologists have directly tested the difference between the two constructs. While grounding his paper in contemporary philosophy, Stokes also draws on cognitive and developmental psychology to identify the architectural features common to genius-level creativity, as well as more everyday forms of creativity. He starts by making a distinction between “truth-boundedness”—cognitive states that function to accurately represent the world—and “non truth-bound” states that do not function to accurately represent the world, but instead facilitate the manipulation of the information they represent. He argues that richly creative achievements in the arts and sciences, as well as more everyday breakthroughs, draw on cognitive manipulation processes. Stokes concludes that imagination serves the cognitive manipulation role and is typified by four features: It is non truth-bound, under immediate voluntary control, engages with affective and motivational systems, and drives inference and decision-making. Stokes’s essay has implications for a number of philosophical problems relating to imagination and fiction, as well as psychological issues relating to the role of conscious, deliberate thought in creativity.

On the latter question, there is a tendency that appears in various forms throughout intellectual and artistic history to regard conscious thought as irrelevant or even inimical to creativity. In the classical story where creative inspiration comes to an artist from an external muse, the artist’s consciousness is not the source, but rather the recipient, of creative work. The same is true when an insight is said to emerge from the unconscious mind, showing up in consciousness as a kind of pleasant surprise (Eureka!). There is also the popular perception that conscious thought *impedes* creativity; thus the familiar accounts of artists using drugs, alcohol, or other trance-inducing practices as a means of surrendering conscious control and giving free rein to the creative unconscious.

In chapter 9, however, psychologists Roy Baumeister, Brandon Schmeichel, and C. Nathan DeWall suggest that consciousness deserves more creative credit. They present evidence to support the notion that creativity requires an interactive collaboration of conscious and unconscious processes. In their view, creative impulses originate in the unconscious but require conscious processing to edit and integrate them into a creative product. They review psychological experiments showing that creativity declines sharply when consciousness is preoccupied (for example, improvising jazz guitar while counting backward by six, or drawing with colored pencils while listening closely to music). They conclude that the research contradicts the popular view in both psychology and philosophy that consciousness is irrelevant

or an impediment to the creative process. Instead, they believe that the research fits well with recently emerging understandings of the special capabilities of conscious thought.

Earlier, when we discussed the potential connection between creativity and self-understanding, we were concerned with what makes each of us who we are as individuals. But we can also ask, more generally, what makes us who we are *as a species*, and there is a long tradition of Western thought that seeks to understand what makes us human in terms of what makes us *distinctively* human, and set apart from other animals in particular. Whatever we think of the existing proposals that highlight our allegedly unique possession of reason, language, and metacognition, creativity seems as good a candidate as any. The tricky question, of course, is how did creativity evolve in humans?

In chapter 10, Elizabeth Picciuto and Peter Carruthers provide an integrated evolutionary and developmental account of the emergence of distinctively human creative capacities. Their main thesis is that childhood pretend play (e.g., imagining battling spaceship invaders) is a uniquely human adaptation that functions in part to enhance adult forms of creativity.

In support of their view, they draw on a wide literature spanning evolutionary, cognitive, and developmental psychology. They begin by reviewing evolutionary accounts of what makes humans unique, including our language, enhanced working memory, culture, and convergent and divergent thinking. They consider pretend play as a distinctively human ability, noting its universality, and showing that nearly all children, cross-culturally, engage in it. They review existing views of the functional roles of pretend play, including the facilitation of social schemata and theory of mind. Unconvinced by these accounts, they argue instead that pretend play facilitates creative thought—a process that involves both defocused attention and cognitive control. They review a number of common capacities of both pretend play and creativity, including generativity, supposing, bypassing the obvious, and selection of valuable but less obvious ideas. They conclude that childhood pretense paves the way for creativity in adulthood. This chapter is a fine example of how philosophers can contribute to our understanding of issues that are also pursued by scientists, in this case concerning the emergence of the capacities we have as human beings to pretend and create.

In our technologically driven age, it is not uncommon to think of what makes us human in contrast not only to other animals but also to machines, computers, and robots. Artificial intelligence is becoming ever more sophisticated, and some programs already display certain marks of creativity, appearing in major art galleries and garnering patents. These are machines whose products are both valuable and new. In addition to these two standard conditions, Margaret Boden maintains in chapter 11 that a creative product is one that is surprising as a result of the combination, exploration, or transformation involved in producing it. She gives examples of artificial intelligence systems that fit all of these criteria, and raises this intriguing

question: Could a computer-based system ever “really” be creative? This leads to interesting philosophical issues about what constitutes “real” creativity. With some qualification, she argues that real creativity involves autonomy, intentionality, valuation, emotion, and consciousness. But as she points out, the problem is that each one of these elements is controversial in itself, even if we don’t consider it in relation to creativity and/or artificial intelligence. Boden concludes that we will not be able to understand whether creativity and artificial intelligence are contradictions in terms until we have clear and credible accounts of all these matters. Her chapter thus highlights the important role that philosophy can play in both psychology and artificial intelligence by further clarifying the constructs involved.

Philosophy of Science

Today, it’s understood that creativity can be at work in virtually every human pursuit. In the past, however, thinking about creativity tended to be much less inclusive. Once again, Kant is a telling example. Having defined genius as the capacity to produce ideas that are both original and exemplary (i.e., “creative” in our terms), he asserted that genius could only be manifested in the fine arts.²⁰ Scientists were not geniuses because they follow the set procedures of the scientific method rather than giving free rein to their imaginations. Even Isaac Newton, whom Kant called the “great man of science,” was not deemed to be a creative genius. Nor, for that matter, was Kant himself!

Despite the much broader scope that we now accord to creativity, there is still a remnant of the Kantian intuition in popular stereotypes of the creative person that are more strongly associated with the artist than with anyone else. In chapter 12, psychologist Dean Keith Simonton argues, in effect, that there is something right about this Kantian tendency, as he explores the question: How does creativity differ between domains? In so doing, he integrates two philosophical traditions. The first tradition, stemming back to Auguste Comte, is concerned with whether the sciences can be arrayed into a hierarchy. The second tradition, which includes Alexander Bain and William James, concerns whether creativity and discovery involve a process of blind-variation and selective-retention (BVSR). The key part for this issue is blind-variation. Roughly, a process is “blind” to the extent that the probability of it’s generating a certain idea is not a function of that idea’s utility or value. A completely random procedure would be an example, though not the only example, of a blind process. Drawing on psychological research, Simonton shows that a valid hierarchy can be formed based on objective criteria regarding creative ideas, products, and persons. In place of Kant’s stark dichotomy between the sciences and the fine

²⁰ Kant (ibid.).

arts, Simonton's hierarchy comprises a wide range of disciplines in the sciences, the humanities, and the arts. Where a discipline falls in the hierarchy depends on the extent to which practitioners need to engage in BVSr processes in order to make contributions that are creative (new and useful). Domains at the top of the hierarchy (i.e., sciences) rely more on sighted variations, whereas domains at the bottom (i.e., arts) depend more on blind variations. Simonton also shows that a discipline's position in the hierarchy depends on the characteristics and developmental experiences of the creator. Simonton's chapter is an intriguing synthesis of issues in both psychology and philosophy regarding the classification of creativity across domains.

Philosophy of Education (and Education of Philosophy)

Our final two chapters deal with the teaching and learning of creativity. It is not unusual to find people who assume that creativity is an innate capacity that cannot be taught or learned. Edward Young and Immanuel Kant were part of a long tradition of thinkers who held such a view, and in arguing for it, they did us the service of exposing the kinds of assumptions that make it seem compelling. In chapter 13, Berys Gaut identifies two key arguments: The first is that learning requires imitation, which is incompatible with creativity; the second is that learning consists in following rules, which is incompatible with creativity. After criticizing these arguments, Gaut develops a positive case for the teachability of creativity, based on the teachability of the kinds of abilities and motivations that are involved in creativity. There is a sense in which Gaut's question can be settled empirically: We can show that creativity *can be* taught simply by pointing to cases where it *has been* taught. Gaut himself discusses such examples as they occur in mathematics and fiction writing, noting in particular how heuristics or rules of thumb are used in these domains. But while such cases may suffice to show that creativity can be taught, Gaut further enriches our understanding by explaining *how this is possible* despite the common misconceptions that may seem to rule it out. Having given a philosophical account of how creativity can be taught, he ends by applying his analysis to the teaching of creativity within philosophy itself.

With this last theme, Gaut has a kindred spirit in Alan Hájek, the author of our final chapter. In fact, between the two of them, we have an instance of "multiples" in creativity research, cases where people working independently arrive at the same discoveries at about the same time.²¹ Although Gaut and Hájek were unaware of each other's essays before submitting them for this volume, they converged on an interesting proposal—that by using various heuristics, philosophers can enhance

²¹ Dean Keith Simonton, *Creativity in Science: Chance, Logic, Genius, and Zeitgeist* (New York: Cambridge University Press, 2004).

their abilities to make valuable contributions to their field, including ideas that are distinctively creative.

As Hájek notes, it is said that anyone of average talent can become a strong chess player by learning and internalizing certain *chess heuristics*—“castle early,” “avoid isolated pawns,” and so on. Analogously, Hájek suggests, philosophy has a wealth of heuristics—*philosophical heuristics*—although they have not been nearly so well documented and studied. Sometimes these take the form of useful heuristics for generating counterexamples, such as “check extreme cases.” Sometimes they suggest ways of generating new arguments out of old ones, as in “arguments involving possibility can often be recast as arguments involving time, or space.” Sometimes they provide templates for positive arguments (e.g., ways of showing that something is possible). Hájek offers this chapter partly as an introduction to a larger project of identifying and evaluating philosophical heuristics, illustrating them with numerous examples from the philosophical literature. This work is a creative contribution to the philosophy of education. And it offers insights for the philosophy of creativity too, as it shows in fine detail how, contrary to a common assumption, creativity can be compatible with and even enhanced by the following of rules.

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