

The Philosophy of Creativity

Berys Gaut*

University of St Andrews

Abstract

This paper surveys some of the central issues in the philosophy of creativity and argues that **an adequate treatment of them requires attention to the rich psychological literature on creativity**. It also shows that the range of interesting philosophical questions to be raised about creativity is much wider than concerns its role in art. Issues covered include **the definition of 'creativity'**; **the relation of creativity to imagination**; whether the creative process is rational; whether it is teleological; the relation of creativity to knowledge; whether creativity can be explained; computational and Darwinian theories of creativity; whether creativity is a virtue; the relation of creativity to tradition; the aesthetic value of creativity; and whether creative activity is different in science and art.

1. Introduction

Ask someone what she associates with art and it is likely that the first words that come to her mind will include 'emotion', 'expression' and 'creativity'. And not only in relation to art does creativity figure prominently in popular thought, for our culture is obsessed with creativity: working in 'the creative industries' carries a large amount of cachet, business books on innovation abound and we are regularly abjured to 'think outside the box'. It is natural to assume, then, that the philosophical work on creativity would be voluminous. And historically, some great philosophers have had much of interest to say on the subject. Plato (*Ion*) argued that inspiration is a kind of madness and Kant (*Critique of the Power of Judgment* esp. sections 43–50) linked creativity to imagination; both accounts were powerfully influential on Romanticism and thereby on popular conceptions of creativity. Yet surprisingly little philosophical work was done on creativity in the period 1950–2000, and it is only in the last 10 years or so that there has been a revival of interest in the topic, marked in part by two anthologies (Gaut and Livingston; Krausz et al.). Interesting work has been done on the topic by philosophers, some of which we will review in what follows. But in contrast to such perennial favourites in the philosophy of art as the nature of interpretation, the definition of 'art' and the concept of the aesthetic, creativity has received remarkably little attention by aestheticians; nor has it been much examined by other philosophers. Yet given its importance and the number of interesting philosophical questions it raises, it should be a major topic in philosophy. There is also an enormous amount of work in the psychology on creativity, which has often been neglected by philosophers, but which provides invaluable resources with which to build a philosophical theory of creativity. That theory should not be one solely in aesthetics, for creativity is to be found in science, craft, business, technology, organisational life and everyday activities; and discussing its philosophy requires drawing on the resources not just of the philosophy of art but many other areas of philosophy, including the philosophy of mind, science and epistemology.

2. *The Importance of the Psychology of Creativity*

The relative neglect by philosophers of the topic of creativity could not stand in stronger contrast than to the situation in psychology. In 1950 J. P. Guilford gave a highly influential Presidential address to the American Psychological Association in which he pointed out how little work had been done on the topic by psychologists. Since Guilford called attention to this lacuna, psychological work on creativity has burgeoned. Many significant theories of creativity abound, including psychoanalytic, cognitive psychological, computational, Darwinian, sociocultural and personality studies approaches; and there is a rich set of data, encompassing laboratory studies and historical case studies, that has been produced by psychologists. There are comprehensive and very useful reference works on creativity (Pritzker and Runco; Sternberg); several psychological journals are devoted to the topic, including *Creativity Research Journal* and the *Journal of Creative Behavior*, and in a reliable sign of a rich and mature field, there are now three textbooks devoted to the psychology of creativity (Runco; Sawyer; Weisberg, *Creativity*).

Surprisingly, philosophers have largely ignored this body of material in discussing creativity, though the computational theory (Boden; Clark; Novitz, 'Creativity and Constraint') and the cognitive psychological approach (Carruthers, *The Architecture of the Mind*, ch. 5; 'Human Creativity'; Prinz and Barsalou) have received some important discussions. But there is no hope of developing an adequate philosophical theory about creativity if it is mischaracterised or inadequately described. Many psychologists stress the pervasiveness of myths about creativity in our culture; some of these myths stem from philosophers, such as Plato's divine inspiration account. Whether all of the identified conceptions are myths is a moot point, but it is certainly true that one cannot take popular conceptions as a given to be fed into philosophical theories. One of the most influential introspective reports on creativity was provided by Henri Poincaré who described his own experience of creativity in terms of swarms of ideas arising and combining randomly in his unconsciousness and then his selection of the most promising ones according to aesthetic criteria ('Mathematical Creation'). Graham Wallas drew on Poincaré's account to develop a theory of the creative process as consisting of four stages: preparation, incubation, illumination and verification (or elaboration) (*The Art of Thought*), which was then more generally disseminated and which has been discussed by philosophers (Kronfeldner 589; Sparshott 179). But some psychologists question whether it applies universally; one alternative cognitive science model is the 'geneplore' (generate and explore) theory, which is two-stage (Ward et al. 191–3). And whereas Poincaré takes it to be manifest that the incubation process involves elaborate unconscious work, there are alternative possibilities: for instance, it may be that when a person is not thinking about a problem, she forgets the preconceptions that previously blocked her from finding the solution: hence the reason for the creative breakthrough lies in her forgetting her fixation, rather than in the occurrence of an elaborate unconscious thought process (Smith; Smith and Blankenship). Since the idea that a central aspect of the creative process involves complex unconscious thought is so common, it would be easy to take it as a datum of an adequate philosophical account: in fact, it is a substantive and disputed psychological claim.

Psychological theories also often raise interesting philosophical questions and bear on philosophical claims about creativity, though these connections have often been missed. I consider four examples.

First, given the growing prominence of virtue theories in moral philosophy, epistemology and aesthetics, the question of whether creativity is a virtue is an important one. Linda Zagzebski has answered in the affirmative, arguing that creativity is a 'stellar virtue'

(167). Psychological findings about creative motivation and personality are clearly germane here, yet philosophers seem not to have published anything on the connection. This psychological evidence points in more than one direction. On the one hand, it paints a none too attractive picture of the creative individual: in a meta-analysis of almost 50 years of research into the creative personality, Gregory Feist writes that creative people 'tend to be open to new experiences, less conventional and less conscientious, more self-confident, self-accepting, driven, ambitious, dominant, hostile, and impulsive' (290). From a virtue perspective this is a mixed bag, and certainly being hostile and none too conscientious are closer to being vices than virtues. If creativity is connected to these sorts of traits, its status as a virtue is under pressure; to protect the claim, one could invoke a large degree of the disunity of the virtues or insist on a sharp distinction between intellectual and moral virtues, though there is a price to be paid for these moves – Zagzebski for instance argues that the distinction between intellectual and moral virtues is 'highly artificial' (180). On the other hand, some psychological research about creative motivation may seem to support the virtue theorist. According to Aristotle (1105a33–4) the virtuous person decides on virtuous actions for their own sake: the motivation is in this sense intrinsic, rather than instrumental. According to extensive research done by Teresa Amabile (81–127), being intrinsically motivated makes a person far more likely to be creative (though her later work also allows a role for what she calls informational extrinsic motivation). Amabile has constructed, independent of philosophical sources, a picture of the creative person that will be attractive to the virtue theorist. One cannot of course infer from these empirical findings to any particular philosophical position on the status of creativity as a virtue; but they are certainly relevant, and there is interesting philosophical work to be done here.

Second, consider the issue of the rationality of creativity. For Plato, a poet is 'never able to compose until he has become inspired, and is beside himself, and reason is no longer in him' (534b3–5). The association between creativity, irrationality and madness has been a recurrent one. But it has recently been challenged by Jon Elster, who argues that artistic creativity is a matter of maximising artistic value subject to constraints and thus is a rational activity (175–269). Elster's claim has been disputed on the grounds that artists do not invariably aim to maximise artistic value and that one can be creative in violating constraints, as well as in following them (Levinson). But there are wider challenges to the rationality account of creativity that stem from the psychological findings about the connection between creativity, particularly in the arts, and various types of psychological disorder. Arnold Ludwig in a study of more than 1000 eminent individuals in 18 professions found that artists were more likely to suffer from all forms of psychopathology than other professions; and there is a strong association between artistic creators and bipolar disorder. According to some psychological theories, this is no mere correlation, for various forms of irrationality promote artistic creativity: Hans Eysenck argues that a medium-high level of psychoticism (a tendency to psychosis) promotes creativity, since it is marked by overinclusive thinking that breaks down distinctions and leads to overgeneralised concepts that yet may be creatively fruitful. (For discussion of these findings and theories, see Feist 275–8, 287–8; Simonton, *Origins of Genius* 94–104.) Philosophical defenders of the rationality of creativity need to address the challenges that these empirical findings pose, either by showing how they are consistent with the creative process as a rational one, or by calling into question their methodology.

Third, what is creative is commonly thought of as being opposed to what is traditional. Several philosophers have argued, however, that the existence of a tradition in some domain is necessary for creativity in that domain (Bailin, ch. 2; Briskman 30–5; Carroll;

Olsen). If creativity requires traditions and traditions are essentially social, then creativity is essentially social. And interestingly, the currently most influential of psychological theories of creativity, the sociocultural or systems approach, also argues that creativity is essentially social: whether a product is creative constitutively depends on the judgements of a field of experts using the appropriate standards of the historically conditioned domain of activity (Amabile; Csikszentmihalyi; Sawyer 117–54). In emphasising the essential role of the social and institutional framework (the field) the sociocultural theory of creativity is analogous to the Institutional Theory of Art, which stresses the essential role of the art-world in defining ‘art’. But the sociocultural theory is in an important respect more sophisticated, since in also making the role of the domain essential, it allows for a set of internal reasons to bear on the determination of creativity. Yet, though the sociocultural theory is closely connected to some philosophers’ claims about the essential relation of tradition to creativity, it too seems to have escaped philosophical attention.

Fourth, the Darwinian theory of creativity models creativity on the process of natural selection: it holds that the creative process consists in two stages, a ‘blind’ stage of the generation of ideas, and a selection stage which chooses the most promising of those ideas for further consideration (Campbell; Simonton, ‘Creativity as a Darwinian Phenomenon’; *Origins of Genius*). The theory is one of the most discussed views in the psychology of creativity, but it has received little philosophical attention. Dutton accepts its broad outlines for scientific creativity, but questions whether it works for the arts, in part because the success-rate for artists is too high: Picasso’s sketches for *Guernica* are not like the false starts of a scientist which have only historical interest; rather, they are important creative achievements in their own right (192–6). Briskman endorses a modified version of it, requiring ‘soft’ or ‘plastic’ control (allowing ends to be revised) of the blind process so as to allow in a partial element of teleology (38–40). But the theory is deserving of far more sustained philosophical discussion. For instance, by ‘blind’ its proponents usually claim they do not mean ‘random’, and that is just as well, since one can take credit for being creative, but one cannot take credit for a purely random process and so could take no credit for the generative aspect of the creative process. But what exactly is meant by blindness varies in different formulations of the theory and some of these formulations evacuate the theory of interesting content. According to Campbell blindness means ‘going beyond the limits of foresight or prescience’ (381), and he applies this to creative discoveries. He worries that the notion of creative discoveries being blind is ‘close to being an analytic tautology’ (396). In fact, it *is* a tautology when applied to discoveries: if a person is creative in discovering some state of affairs, *p*, then she did not in advance know *p*, i.e. she did not have foresight of *p*. That follows by virtue of the meaning of ‘discover’: one can discover only what one does not know before one has discovered it. So what looks like a substantive theory turns out in Campbell’s version to be an analytic truth that depends not on the meaning of ‘creative’, but on that of ‘discover’. It would be a worthwhile philosophical project to disambiguate the various notions of blindness at play within the theory and see whether more precisely stated theories can escape the threat of simple tautology or of being so weak that they are consistent with teleological theories, to which they are supposed to provide a contrast.

3. Some Philosophical Issues

So a fruitful way for the philosophy of creativity to develop would be by paying far closer attention to the psychological literature on creativity, both because it bears on issues that philosophers have discussed (creativity as a virtue, the rationality of creativity and the

relation of creativity to tradition) and because it raises issues and puzzles of which philosophers would otherwise have been unaware (the Darwinian theory). And many of the psychological theories would also benefit from philosophical analysis and critique. But it would be misleading to give the impression that the philosophy of creativity is largely an untilled field. I will very briefly sketch four issues that have been debated and then examine three further issues in greater detail.

Can creativity be explained? Many philosophers have held that it is not susceptible to naturalistic explanation. Plato (*Ion*) thought that this is so because it is an activity of the gods in us. Kant maintained that explanations are given in terms of determinate rules and there can be no such rules for the production of beautiful art, which is the domain of genius, and the genius does not know himself where he gets his ideas from (Ak. 5: 307–9). It has also been argued that the uniqueness of the creative product defeats explanation by general laws (Jarvie) and its fundamental novelty entails that it could not have been predicted (Hausman, ‘Criteria of Creativity’; *A Discourse*). Briskman, in contrast, has argued that, though one cannot explain token acts of creativity, one can explain how creativity is possible (‘Creative Product’). Most recently Kronfeldner has powerfully argued that there is no reason to deny that creativity can be naturalistically explained (‘Creativity Naturalized’).

Computational accounts of creativity have also been discussed. Margaret Boden argues that computational ideas can help us to understand human creativity, and distinguishes three kinds of creativity: combinational (the unfamiliar combination of familiar ideas); exploratory (exploring a conceptual space); and the most radical kind of creativity, transformational (transforming a conceptual space, thus allowing someone to think thoughts that they could not have thought before) (Boden esp. 3–10). David Novitz has questioned the tenability of these distinctions, holding that radical creativity is possible in the absence of a prior conceptual space, as in Jenner’s invention of the smallpox vaccine, and transforming a conceptual space does not suffice for radical creativity, as in Goodyear’s opportunistic discovery of vulcanisation (Novitz, ‘Creativity and Constraint’). Boden has defended the usefulness for thinking about creativity not just of classical AI but also of connectionist architecture, the latter in particular for combinational creativity (ch. 6; see also Martindale). But it has also been queried whether certain types of connectionist architecture can be creative due to their representational limits (Clark). These debates about creativity also depend on broader and more familiar debates about computer models of the mind. If, as I will argue shortly, creative activity requires some degree of understanding, then, if computers cannot exhibit understanding (Searle), they cannot be creative. And if not all domains of human understanding can be specified in terms of rule-governed operations (Dreyfus 285–305), then in these domains computational theories of creativity that are based on classical AI are not possible.

Philosophers have also discussed whether creativity operates in the same manner in all domains, including arts and sciences. Kant holds that genius occurs only in the fine arts, and not at all in science, in part because the activity of genius is not rule-governed, but that of the ‘great mind’ in science is (Ak. 5: 308). Almost everyone else agrees that creativity at the highest level occurs in both domains. Psychologists have generally held that creativity operates in much the same way in both domains (e.g. Weisberg, *Creativity*, ch. 1), and some philosophers have agreed, holding that both artistic and scientific creativity are a matter of problem solving (Briskman). However, several aestheticians have objected that the artist, unlike the scientist, is not standardly confronted with problems to solve (Dutton, ‘What is Genius?’ 192–6; Leddy; Levinson 252). Another claimed disanalogy is that in art genuine creation (the bringing of something into existence) occurs, whereas

the scientist only discovers things. Creative discovery is possible, but the difference between creation and discovery explains why independent discoveries are possible and indeed common in science (e.g. Darwin's and Wallace's independent discovery of the theory of natural selection), whereas it seems to make no sense to suppose that someone else could have created a particular artistic work. This apparent disanalogy is a problem for Platonists, who hold that those artworks that are universals are eternal existents and so are discovered, rather than created. Kivy, a musical Platonist, has responded that though musical works are indeed discovered, some are so unique that they can be discovered only by people uniquely constituted to discover them, so one can explain the absence of independent discoveries in music (Kivy 72). Here issues about creativity intersect with more general issues about the ontology of art.

There is also a question of whether creativity in art is an artistic (or aesthetic) value. Formalists deny the relevance of a work's generative context to its evaluation, and so have denied that the artist's creativity is an artistic value in her works (Beardsley). Some non-formalists have agreed, partly on the grounds that the fact that a work is original in being the first of its kind gives it some historical value, but that in itself provides it with no artistic value, for the apparent artistic value of originality in such cases is entirely reducible to the artistic value of the property (such as being beautiful) in respect of which it is original (Elster 180; Sibley; Vermazen). Against this it has been argued that artistic achievement is an artistic value, and whether a work is an artistic achievement or not partly depends on whether it is original (Levinson 239–40). However, it has also been queried whether Levinson has the correct account of achievement required to underwrite the full relevance of artistic creativity (Davies).

This very brief overview of four issues should suffice to point the reader in the right direction through the literature on these topics. I turn now to examine in greater detail three philosophical issues, and will show the bearing of psychology on each of them. In the course of discussing these issues, I also sketch the outlines of a paradigm for thinking about creativity: the *agency theory* of creativity.

3.1. THE DEFINITION OF 'CREATIVITY'

There is a broad consensus that creativity is the capacity to produce things that are original and valuable. The value condition is generally deemed necessary to rule out cases of worthless originality as being creative: as Kant argues, 'since there can also be original nonsense, its [the genius'] products must at the same time be models, i.e., exemplary' (Ak. 5: 308). The two conditions have been widely adopted by both philosophers and psychologists (for a survey of the latter see Mayer). Some definitions also appeal to surprise: for Boden creativity is an ability to produce something that is new, surprising and valuable (1); and for Novitz to be creative a recombination of ideas must be valuable and surprising ('Creativity and Constraint' 77). Since newness may hold in some trivial respect, the invocation of surprise can best be thought of as stating in what respect newness must hold for it to count as originality, understood as salient newness; so such definitions turn out to be variants of the standard two-part definition. Boden also very usefully distinguishes between H-creativity (historical creativity: no one else has had the idea before) and P-creativity (psychological creativity: the idea is new to a particular individual, but may have occurred to others before) (43).

Even if we hold that originality and value are only necessary conditions for creativity, there is a problem. For there appears to be such a thing as malevolent or 'dark' creativity; one can, for instance, be creative in producing torture instruments (McLaren) or in

committing terrorist atrocities, such as the attacks of 11 September 2001 (Cropley et al.; Beaney 190–1). Since torture instruments and the mass slaughter of innocents have extreme negative value, the value condition for creative products seems to be false. There has been very little discussion about how to handle the difficulty – and simply abandoning the value condition would open up the problem of counting original nonsense as creative. Novitz has denied that such cases are ones of genuine creativity, but are rather cases where people are ‘ingeniously destructive’ (‘Creativity and Constraint’ 78; see also ‘Explanations of Creativity’ 186–7); whereas the psychologists Cropley et al. have argued that these cases are genuinely creative, since on their functional model of creativity, an act is creative if it is both original and effective in promoting its agent’s purposes. Novitz’s solution fails to capture many people’s (sometimes equivocal) intuitions that there is something creative about these evil acts. And the functionalists’ solution entails that had the terrorists’ acts been foiled they would no longer have been creative, but one might suppose that their creativity depended on thinking up the idea in the first place rather than being successful in carrying it out. Coming up with a satisfactory account of how to handle such cases is a leading problem in the philosophy of creativity.

The value and originality conditions also do not suffice for creativity. Tectonic movements of the earth’s crust have the capacity to produce diamonds, which are valuable (financially and aesthetically) and some are original (in the sense of being saliently different from other diamonds); but it would be conceptually confused to call tectonic movements creative. Rudolf Arnheim has argued that trees can be creative, on the grounds that they distribute their branches to make best use of light and that the resulting canopy ‘represents the solution of a vital problem and what we experience as the beauty of the tree. The tree is acting creatively, not just metaphorically – it is the real thing.’ (24). But the tree is not acting at all, since it lacks desires, beliefs and other intentional states; so *a fortiori* it cannot be acting creatively. Creativity is a property of agents, not of mere things or plants (see also Carruthers, *The Architecture of the Mind*, ch. 5; Stokes).

Not just any kinds of agents’ actions count as creative. Suppose that in walking through a studio you accidentally knock over a set of paints, which spill onto a canvas, and they happen to combine to produce a beautiful and original painting. You would not be creative, since the painting was purely the product of luck. Being creative is incompatible with doing something purely by luck (serendipity is compatible with creativity, for serendipity is the skilful use of chance, not pure luck). Or consider someone who produces something original and valuable simply by mechanically searching through all the possible combinations available to him, as reportedly did Charles Goodyear in discovering vulcanisation (Novitz, ‘Creativity and Constraint’ 75). Goodyear’s discovery does not count as creative since it displays no understanding or skill (Gaut, ‘Creativity and Imagination’ 150–1). Or consider someone who makes a painting by painting-by-numbers, which is not creative (Deutsch 210–1); this is because she is following exactly specified rules, which leave no room for individual judgement. Finally, consider a chimp brushing paint boisterously onto paper: her trainer removes the paper at the point at which it is aesthetically pleasing, but left to their own devices chimps will keep adding more paint and simply end up with a mess (Dutton, *The Art Instinct* 7; the same is true of some 3 and 4 year old children). The chimp has not been creative, since she lacks the evaluative capacity to assess her own work and thus to know when to stop. In short, the kinds of actions that are creative are ones that exhibit at least a relevant purpose (in not being purely accidental), some degree of understanding (not using merely mechanical search procedures), a degree of judgement (in how to apply a rule, if a rule is involved) and an evaluative ability directed to the task at hand. As shorthand for these features,

we can say that creative actions must exhibit *flair* (Gaut, 'Creativity and Imagination' 151). Putting this together, creativity is the capacity to produce original and valuable items by *flair*. So creativity requires a three-part, not the standard two-part definition; and it is a particular exercise of agency. As such it is open to agents, whether human or not, that have the requisite capacities.

3.2. CREATIVITY AND TELEOLOGY

Creativity, I have argued, is a property of an agent with certain capacities. It does not follow from this that all creative processes (sequences of events) are actions, only that such processes must occur in agents. However, if it were maintained that creative processes were never actions, even though they must occur in agents, this would give reason to doubt whether the agency claim really were correct: if creative processes were never actions, why should they occur only in agents? Actions are teleological events: they aim at desired states of affairs. Yet it has been argued by several philosophers that the creative process cannot be, in a certain sense, teleological. Many introspective reports stress that creative insights sometimes occur unbidden and spontaneously (e.g. Poincaré); and anti-teleological accounts appeal to these data.

There is an *a priori* argument that purports to show that the creative process cannot be teleological. If one takes the means to an end, one has to know the end. But if a process of making something is creative, then one cannot know the end: for if one knows the end, one has already been creative. For instance, a poet creating a poem cannot already know what the poem is. So the creative process does not consist in taking means to ends: it is not teleological. Vincent Tomas argues on something like these lines (4). He contrasts the creative agent to a rifleman, who to aim at his target must already know what he is aiming at. Instead, Tomas thinks of the creative process in terms of inspiration 'kicking' the artist (13), and such inspiration is then elaborated by the artist's critical judgement. Monroe Beardsley defends Tomas' view, attacking 'finalistic' theories and defending a version of the 'propulsive' theory, by which the creative process is a set of causally connected events governed by the evolving state of the work, starting with the incept, the artist's initial inspiration ('On the Creation of Art'). R. G. Collingwood also denies that means-and-end terminology is applicable to the process of artistic expression on the grounds that the artist's end cannot be something foreseen and preconceived (111).

The *a priori* anti-teleological argument and its conclusion should be rejected. First, consider a teleological process where the goal is completely predetermined, in the sense that the creative person has already decided precisely what the finished product must be like. Even this sort of process is compatible with creativity. For there is creativity of means as well as of ends. An architect may precisely specify the design of a building, but his structural engineer may still be highly creative in finding out a means to realise that design physically. Second, a creative process can, and standardly does, have a partly indeterminate goal: a poet or painter may begin with only a rough idea of what she aims to write or paint, and her creativity consists in part in clarifying the goal that she is trying to reach. So the process is teleological, and deliberation about achieving the goal consists not only in considering instrumental means (those actions that will realise it) but also constitutive means (more precise specifications of the end). Third, the alternative propulsive model, insofar as it disavows all teleological elements, is incoherent. Tomas talks of inspiration kicking the artist when he goes wrong, but if the artist has a sense that he is going wrong, he must have some sense of what it would be to go right, that is, he must have some idea of what is his goal (Gaut, 'Creativity and Skill' 86–94; Hospers 245).

Finally, it has been argued, in support of a teleological account, that an artist's deliberations can play a crucial role in establishing and refining a set of artistic constraints that guides her creative explorations and determines whether her product counts as creative (Livingston, 'Poincaré's "Delicate Sieve"': *Art and Intention*, ch. 2).

So token creative processes can be teleological, though it does not follow from this that all must be so; Khatchadourian, for instance, argues on the basis of empirical inspection of a variety of cases, that some creative processes are teleological and others are not ('Creative Process'). Those cognitive psychologists, who think of creativity as a search through a problem space, take a stronger line, maintaining that the creative process is 'a teleological one, governed by plans restricting the final product that exist at the outset and plans that arise during the course of creating' (Perkins 286).

A prominent argument for the claim that creative ability is not a matter of skill holds that, since skill is a matter of taking means to one's ends and creative activity is not teleological, creativity cannot involve a skill. Rejection of the anti-teleological argument therefore removes this impediment to the claim that creativity involves a kind of skill, though to defend this claim one has also to show that creativity satisfies the criteria for some ability's being a skill (Gaut, 'Creativity and Skill' 94–8). There is a great deal of evidence that creative ability requires a wide range of knowledge and skills (Weisberg, 'Creativity and Knowledge') and some evidence that it can to a degree be learned (Nickerson). It does not follow from this, of course, that creativity is only a matter of skill.

3.3. IMAGINATION

Imagination is frequently associated with creativity – indeed, in one of its uses, 'imaginative' is a near-synonym for 'creative'. On the teleological account, imagination may be employed in specifying one's goals and in considering means to achieve them, though non-teleological theories can also acknowledge a role for imagination.

According to Kant imagination has a constitutive connection to creativity: a component of genius is spirit, and this is 'the faculty for the presentation of **aesthetic ideas**; by an aesthetic idea, however, I mean that representation of the imagination that occasions much thinking though without it being possible for any determinate thought, i.e., **concept**, to be adequate to it, which, consequently, no language fully attains or can make intelligible' (Ak. 5: 314). For Kant imagination is the faculty to intuit even when an object is not present, and he distinguishes between reproductive imagination (for instance, memory images) and productive imagination, 'the authoress of voluntary forms of possible intuitions', which is a free use of the imagination (Ak 5: 240). It is the latter that the genius employs. But it is mysterious what exactly an aesthetic idea is. Cohen has argued that it is 'a kind of bloated intuition, an intuition too ample to be subsumed under any concept' (140), and this fits well with creativity in the sensory domain, where the richness of a painter's colours and shapes may resist conceptual classification. But Kant's examples are all drawn from poetry and suggest that by aesthetic ideas he means metaphors, which can indeed occasion much thought, without any determinate concept (paraphrase) being adequate to them (Gaut, 'Creativity and Imagination' 164). While richly suggestive, Kant's claims about the connection between creativity and imagination are frustratingly elusive.

Peter Carruthers has argued for a more precise connection. He maintains that the function of play in young mammals is to practise and enhance distinctive adult behaviours: for instance, play hunting in kittens is practice for real hunting. Both pretend play, and creativity (at a significant level), are specific to modern humans so there is reason to believe that the function of childhood pretend play is to enhance adult creativity. This is

also supported by the fact that pretend play and creativity share a common basis in supposition (imagining): pretend play involves making a supposition, and then thinking and acting within the scope of the supposition, just as does creativity, according to the generate model of generating a hypothesis and then following out its implications ('Human Creativity'; *The Architecture of the Mind*, ch. 5). The functional hypothesis is further supported by the existence of a large temporal gap between the emergence of anatomically modern humans about 100,000 years ago and the 'creative explosion' of about 40,000 years ago, marked by the first appearance of cave paintings (Mithen). The gap rules out several alternative hypotheses about the emergence of creativity, such as its arising from language use, since language long predates 40,000 years; the creative explosion is best explained by the emergence of a disposition to pretend play ('Human Creativity'; see also Currie).

The existence of a creativity gap is disputed, and may be an artefact of the paucity of the archaeological evidence and sampling bias within it, or the result of higher population densities leading to greater retention of creative innovations, rather than any increase in individuals' creativity. For these reasons Carruthers abandons appeal to the gap in his later work (*The Architecture of the Mind* 278–80). And while it is plausible that both pretend play and creativity involve the imagination, his species-specific considerations for the function of pretend play can be challenged: some non-human mammals, despite Carruthers' claim to the contrary, appear to engage in pretend play, or something akin to it: a kitten chasing and biting a ball of wool is engaging in pretend hunting behaviour; it does not believe that it is hunting an animal, since it does not, for instance, try to eat the wool. And even if pretend play were specific to humans, it might have as its evolutionary function something other than enhancing creativity: for instance, pretend play is important in enhancing children's ability to understand others ('mind-reading') (Harris, ch. 3); but plenty of mind-reading is not creative.

More promising in supporting a causal connection, whether functional or not, between pretend play and creativity is evidence from the study of autism: autistic children have little tendency to engage in pretend play, and autistic adults tend to be more rigid and less creative in their problem solving (*The Architecture of the Mind* 314). There are also several psychological studies, which Carruthers does not mention, that show that children who are given ten-minute sessions of free play are more creative, as measured by alternate uses creativity tests, compared to control groups who are given ten minutes of imitative activity or structured problem solving. And children who are given regular play-tutoring sessions, in which they are shown how to engage in sociodramatic play, are more creative than control groups (Dansky). So there is some empirical evidence in favour of a causal connection between pretend play and creativity.

A more direct connection between creativity and imagination has also been defended. Distinguish between passive creativity, where ideas simply occur to one unbidden, and active creativity, where one tries out various approaches to some problem or task in the course of being creative. Imagination is peculiarly suited, that is, suited of its nature, to be the vehicle of active creativity – to be that faculty we employ in being actively creative. For one can imagine various states of affairs without being committed to their truth or to carrying them out, so one can try out various options. In contrast, to believe some proposition is to be committed to its truth, and to intend something is to be committed to carrying it out if one can. So belief and intention are not suited as mental vehicles for the process of trying things out. On this account, not all imaginings are creative, but if one is being actively creative, imagination is peculiarly suited to be the vehicle for one's creative explorations (Gaut, 'Creativity and Imagination' 159–62).

Michael Beaney, accepting the vehicular claim, has argued for a connection model of creative imagination: creativity consists in making connections by the use of imagination between disparate domains, e.g. in metaphor making and generating proofs in Euclidean geometry (200–3; cf. Novitz, ‘Creativity and Constraint’; ‘Explanations of Creativity’). Beaney’s connection model is highly plausible if taken as a statement about how imagination very often functions in creative activity; but it is problematic if taken as a claim about how all creative uses of the imagination work. A painter, sculptor or composer can be highly creative in producing beautiful and original works, but they need not thereby be producing connections between disparate domains; and sometimes one can be highly creative in *disconnecting* things: philosophers can be creative in making distinctions, which separate concepts previously run together. Making connections is one way to be creative, but it is not the only way.

4. Conclusion

I have argued that the agency view of creativity provides a promising philosophical framework within which to study creativity. I have also shown that there is a wide range of philosophically interesting questions that can be raised about creativity, questions that go considerably beyond its role in aesthetics. Most of those questions have not been examined in anything like the detail they merit, and the extensive psychological literature that bears on them has too often been ignored. But there is also a growing body of philosophical work that addresses these issues, which, together with the psychological literature, forms a basis on which future work can build. Creativity is an emerging and exciting area of research within philosophy.

Acknowledgement

I would like to thank an anonymous referee for helpful comments on an earlier draft of this paper.

Short Biography

Berys Gaut is Professor of Philosophy at the University of St Andrews. He received his undergraduate degree from Oxford (Balliol College) and his PhD from Princeton. His research interests lie in aesthetics and particularly its relation to ethics; the philosophy of film; the philosophy of creativity; and moral philosophy. He has published numerous articles in these areas. He is the author of *Art, Emotion and Ethics* (Oxford UP, 2007), and *A Philosophy of Cinematic Art* (Cambridge UP, 2010). He is co-editor of *Ethics and Practical Reason* (Oxford UP, 1997), *The Creation of Art* (Cambridge UP, 2003) and *The Routledge Companion to Aesthetics* (Routledge, 2nd ed., 2005); and is joint series editor of the Wiley-Blackwell *New Directions in Aesthetics* series. He teaches a course on the philosophy of creativity at St Andrews (the syllabus of which is on his website), and his next monograph will be on creativity.

Note

* Correspondence: Department of Philosophy, University of St Andrews, St Andrews, Fife KY16 9AL, UK. Email: bng@st-andrews.ac.uk.

Works Cited

- Amabile, Teresa M. *Creativity in Context*. Boulder, CO: Westview, 1996.
- Aristotle. *Nicomachean Ethics*. Trans. Terence Irwin. Indianapolis, IN: Hackett, 1985.
- Arnheim, Rudolf. 'What it Means to be Creative.' *British Journal of Aesthetics* 41.1 (2001): 24–5.
- Bailin, Sharon. *Achieving Extraordinary Ends: An Essay on Creativity*. Norwood, NJ: Ablex, 1994.
- Beaney, Michael. *Imagination and Creativity*. Milton Keynes: Open UP, 2005.
- Beardsley, Monroe. 'On the Creation of Art.' *Journal of Aesthetics and Art Criticism* 23.3 (1965): 291–304.
- Boden, Margaret. *The Creative Mind: Myths and Mechanisms*. 2nd ed. London: Routledge, 2004.
- Briskman, Larry. 'Creative Product and Creative Process in Science and Art.' *The Idea of Creativity*. Eds. Michael Krausz, Denis Dutton, and Karen Bardsley. Leiden: Brill, 2009. 17–41. Reprinted from *Inquiry* 23.1 (1980): 83–106.
- Campbell, Donald. 'Blind Variation and Selective Retention in Creative Thought as in Other Knowledge Processes.' *Psychological Review* 67.6 (1960): 380–400.
- Carroll, Noël. 'Art, Creativity, and Tradition.' *The Creation of Art: New Essays in Philosophical Aesthetics*. Eds. Berys Gaut and Paisley Livingston. Cambridge: Cambridge UP, 2003. 208–34.
- Carruthers, Peter. 'Human Creativity: Its Cognitive Basis, its Evolution and its Connections with Childhood Presence.' *British Journal for the Philosophy of Science* 53.2 (2002): 225–49.
- . *The Architecture of the Mind: Massive Modularity and the Flexibility of Thought*. Oxford: Clarendon Press, 2006.
- Clark, Andy. 'Connectionism and Cognitive Flexibility.' *Artificial Intelligence and Creativity: An Interdisciplinary Approach*. Ed. Terry Darnall. Dordrecht: Kluwer, 1994. 63–79.
- Cohen, Ted. 'The Inexplicable: Some Thoughts after Kant.' *The Creation of Art: New Essays in Philosophical Aesthetics*. Eds. Berys Gaut and Paisley Livingston. Cambridge: Cambridge UP, 2003. 138–47.
- Collingwood, R. G. *The Principles of Art*. Oxford: Clarendon Press, 1938.
- Cropley, David H., James C. Kaufman, and Arthur J. Cropley. 'Malevolent Creativity: A Functional Model of Creativity in Terrorist and Crime.' *Creativity Research Journal* 20.2 (2008): 105–15.
- Csikszentmihalyi, Mihaly. 'Implications of a Systems Perspective for the Study of Creativity.' *Handbook of Creativity*. Ed. Robert J. Sternberg. Cambridge: Cambridge UP, 1999. 313–35.
- Currie, Gregory. 'The Representational Revolution.' *Journal of Aesthetics and Art Criticism* 62.2 (2004): 119–28.
- Dansky, Jeffrey L. 'Play.' *Encyclopedia of Creativity*. vol. 1. Eds. Steven R. Pritzker and Mark A. Runco. San Diego, CA: Academic Press, 1999. 393–408.
- Davies, David. 'The Artistic Relevance of Creativity.' *The Idea of Creativity*. Eds. Michael Krausz, Denis Dutton, and Karen Bardsley. Leiden: Brill, 2009. 213–33.
- Deutsch, Harry. 'The Creation Problem.' *Topoi* 10.2 (1991): 209–25.
- Dreyfus, Hubert. *What Computers Still Can't Do: A Critique of Artificial Reason*. Cambridge, MA: MIT Press, 1992.
- Dutton, Denis. 'What is Genius?' *Philosophy and Literature* 25 (2001): 181–96.
- . *The Art Instinct: Beauty, Pleasure, and Human Evolution*. Oxford: Oxford UP, 2009.
- Elster, Jon. *Ulysses Unbound: Studies in Rationality, Precommitment, and Constraints*. Cambridge: Cambridge UP, 2000.
- Feist, Gregory J. 'The Influence of Personality on Artistic and Scientific Creativity.' *Handbook of Creativity*. Ed. Robert J. Sternberg. Cambridge: Cambridge UP, 1999. 273–96.
- Gaut, Berys. 'Creativity and Imagination.' *The Creation of Art: New Essays in Philosophical Aesthetics*. Eds. Berys Gaut and Paisley Livingston. Cambridge: Cambridge UP, 2003. 148–73.
- . 'Creativity and Skill.' *The Idea of Creativity*. Eds. Michael Krausz, Denis Dutton, and Karen Bardsley. Leiden: Brill, 2009. 83–103.
- and Paisley Livingston, eds. *The Creation of Art: New Essays in Philosophical Aesthetics*. Cambridge: Cambridge UP, 2003.
- Harris, Paul L. *The Work of the Imagination*. Oxford: Blackwell, 2000.
- Hausman, Carl. *A Discourse on Novelty and Creation*. The Hague: Martin Nijhoff, 1975.
- . 'Criteria of Creativity.' *The Idea of Creativity*. Eds. Michael Krausz, Denis Dutton, and Karen Bardsley. Leiden: Brill, 2009. 3–16. Reprinted from *Philosophy and Phenomenological Research* 40.2 (1979): 237–49.
- Hospers, John. 'Artistic Creativity.' *Journal of Aesthetics and Art Criticism* 43.3 (1985): 243–55.
- Kant, Immanuel. *Critique of the Power of Judgment*. Trans. Paul Guyer and Eric Matthews. Cambridge: Cambridge UP, 2000. (Page references are to the Akademie edition.)
- Khatchadourian, Haig. 'The Creative Process in Art.' *British Journal of Aesthetics* 17 (1977): 230–41.
- Kivy, Peter. 'Platonism in Music: Another Kind of Defense.' *The Fine Art of Repetition: Essays in the Philosophy of Music*. Cambridge: Cambridge UP, 1993. 59–74. Reprinted from *American Philosophical Quarterly* 24.3 (1987): 245–52.
- Krausz, Michael, Denis Dutton, and Karen Bardsley, eds. *The Idea of Creativity*. Leiden: Brill, 2009.
- Kronfeldner, Maria. 'Creativity Naturalized.' *Philosophical Quarterly* 59.237 (2009): 577–92.
- Leddy, Tom. 'Is the Creative Process in Art a Form of Puzzle Solving?' *Journal of Aesthetic Education* 24.3 (1990): 83–97.

- Levinson, Jerrold. 'Elster on Artistic Creativity.' *The Creation of Art: New Essays in Philosophical Aesthetics*. Eds. Berys Gaut and Paisley Livingston. Cambridge: Cambridge UP, 2003. 235–56.
- Livingston, Paisley. *Art and Intention: A Philosophical Study*. Oxford: Clarendon Press, 2005.
- . 'Poincaré's "Delicate Sieve": On Creativity and Constraints in the Arts.' *The Idea of Creativity*. Eds. Michael Krausz, Denis Dutton, and Karen Bardsley. Leiden: Brill, 2009. 129–46.
- Martindale, Colin. 'Creativity and Connectionism.' *The Creative Cognition Approach*. Eds. Steven M. Smith, Thomas B. Ward, and Ronald A. Finke. Cambridge, MA: MIT Press, 1995. 249–68.
- Mayer, Richard E. 'Fifty Years of Creativity Research.' *Handbook of Creativity*. Ed. Robert J. Sternberg. Cambridge: Cambridge UP, 1999. 449–60.
- McLaren, Robert B. 'The Dark Side of Creativity.' *Encyclopedia of Creativity*. vol. 1. Eds. Steven R. Pritzker and Mark A. Runco. San Diego, CA: Academic Press, 1999. 483–91.
- Mithen, Steven. *The Prehistory of the Mind: A Search for the Origins of Art, Religion and Science*. London: Thames and Hudson, 1996.
- Nickerson, Raymond S. 'Enhancing Creativity.' *Handbook of Creativity*. Ed. Robert J. Sternberg. Cambridge: Cambridge UP, 1999. 392–430.
- Novitz, David. 'Creativity and Constraint.' *Australasian Journal of Philosophy* 77.1 (1999): 67–82.
- . 'Explanations of Creativity.' *The Creation of Art: New Essays in Philosophical Aesthetics*. Eds. Berys Gaut and Paisley Livingston. Cambridge: Cambridge UP, 2003. 174–91.
- Olsen, Stein H. 'Culture, Convention, and Creativity.' *The Creation of Art: New Essays in Philosophical Aesthetics*. Eds. Berys Gaut and Paisley Livingston. Cambridge: Cambridge UP, 2003. 192–207.
- Perkins, David N. *The Mind's Best Work*. Cambridge, MA: Harvard UP, 1981.
- Plato. *Ion. Plato: The Collected Dialogues*. Eds. Edith Hamilton and Huntington Cairns. Princeton, NJ: Princeton UP, 1961. 215–28.
- Poincaré, Henri. 'Mathematical Creation.' *The Creative Process: Reflections on Invention in the Arts and Sciences*. Ed. Brewster Ghiselin. Berkeley, CA: University of California Press, 1980. 22–31. Reprinted from *The Foundations of Science*. Trans G. B. Halstead. London: Science Press, 1924. 383–94.
- Prinz, Jesse J. and Lawrence W. Barsalou. 'Acquisition and Productivity in Perceptual Symbol Systems: An Account of Mundane Creativity.' *Creativity, Cognition, and Knowledge*. Ed. Terry Dartnall. Westport, CT: Praeger, 2002. 105–38.
- Pritzker, Steven R. and Mark A. Runco, eds. *Encyclopedia of Creativity*. San Diego, CA: Academic Press, 1999.
- Runco, Mark A. *Creativity: Theories and Themes: Research, Development, and Practice*. Burlington, MA: Elsevier, 2007.
- Sawyer, R. Keith. *Explaining Creativity: The Science of Human Innovation*. Oxford: Oxford UP, 2006.
- Searle, John R. 'Minds, Brain, and Programs.' *Behavioral and Brain Sciences* 3.3 (1980): 417–24.
- Sibley, Frank. 'Originality and Value.' *British Journal of Aesthetics* 25.2 (1985): 169–84.
- Simonton, Dean K. *Origins of Genius: Darwinian Perspectives on Creativity*. New York: Oxford UP, 1999.
- . 'Creativity as a Darwinian Phenomenon: The Blind-Variation and Selective-Retention Model.' *The Idea of Creativity*. Eds. Michael Krausz, Denis Dutton, and Karen Bardsley. Leiden: Brill, 2009. 63–81.
- Smith, Steven M. 'Fixation, Incubation, and Insight in Memory and Creative Thinking.' *The Creative Cognition Approach*. Eds. Steven M. Smith, Thomas B. Ward, and Ronald A. Finke. Cambridge, MA: MIT Press, 1995. 135–56.
- and Steven E. Blankenship. 'Incubation and the Persistence of Fixation in Problem Solving.' *American Journal of Psychology* 104.1 (1991): 61–87.
- Sparshott, Francis. 'Every Horse has a Mouth: A Personal Poetics.' *The Idea of Creativity*. Eds. Michael Krausz, Denis Dutton, and Karen Bardsley. Leiden: Brill, 2009. 83–103. Reprinted from *Philosophy and Literature* 1 (1977).
- Sternberg, Robert J., ed. *Handbook of Creativity*. Cambridge: Cambridge UP, 1999.
- Stokes, Dustin. 'A Metaphysics of Creativity.' *New Waves in Aesthetics*. Eds. Kathleen Stock and Katherine Thomson-Jones. Basingstoke: Palgrave Macmillan, 2008. 105–24.
- Tomas, Vincent. 'Creativity in Art.' *Philosophical Review* 67.1 (1958): 1–15.
- Vermazen, Bruce. 'The Aesthetic Value of Originality.' *Midwest Studies in Philosophy* 16 (1991): 266–79.
- Wallas, Graham. *The Art of Thought*. London: Jonathan Cape, 1926.
- Ward, Thomas B., Steven M. Smith, and Ronald A. Finke. 'Creative Cognition.' *Handbook of Creativity*. Ed. Robert J. Sternberg. Cambridge: Cambridge UP, 1999. 189–212.
- Weisberg, Robert W. 'Creativity and Knowledge: A Challenge to Theories.' *Handbook of Creativity*. Ed. Robert J. Sternberg. Cambridge: Cambridge UP, 1999. 226–50.
- . *Creativity: Understanding Innovation in Problem Solving, Science, Invention, and the Arts*. Hoboken, NJ: Wiley, 2006.
- Zagzebski, Linda. *Virtues of the Mind: An Inquiry into the Nature of Virtue and the Ethical Foundations of Knowledge*. Cambridge: Cambridge UP, 1996.