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## **Creativity as an Epistemic Virtue**

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in H. Battaly (ed.), *Routledge Handbook of Virtue Epistemology* (forthcoming 2018)

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### **1. Creative Acts and Persons: A First Pass**

What is it for an action to be creative? The standard thought is that it must issue in something new and valuable (Gaut and Livingston 2003: 8; Gaut 2010: 1039-41; Kieran 2014a: 126; Paul and Kaufman 2014: 6). This is often motivated by Kant's thought (2000; 5, 308, 186) that original nonsense is insufficient for creativity. I may produce an essay which is novel because it is so trivial and incoherent. To count as creative an essay must be novel in a way that realizes something valuable, such as insight or explanatory power. This is the dominant view, though there are dissenters (Hills and Bird 2018). It is also common to advert to Boden's distinction between psychological and historical creativity (2004: 2, 40-53). According to Boden, an act is psychologically creative if and only if someone produces something valuable, surprising, and new to herself (note the added surprise condition). An act is historically creative if and only if it is psychologically creative and it is the first time this has been done in human history.

However, not every act that generates a new and valuable output is creative. Creativity requires some degree of skill and understanding (Gaut 2003: 150-1; Gaut 2010: 1040; Kieran 2014a: 126-8). Imagine someone rigidly, mechanically follows IKEA instructions with no exercise of imagination, skill or judgment. Even if this was the first time the person constructed flat-pack furniture, it does not follow that she was psychologically creative. Notice too that historical originality need not arise from

psychological creativity. Charles Goodyear's discovery of vulcanized rubber allegedly resulted from accidentally dropping rubber and sulphur onto a hot stove or via a mechanical trial and error procedure (Novitz 1999: 75). In principle originality – whether psychological or historical – can come apart from creativity. Nonetheless, if we want to do something original, then it is best to strive to be creative.

Attributing creativity to a particular action presupposes something about how the action came about. What might this something be? Minimally a creative action must involve capacities, abilities and processes, such as imagination, skill, knowledge, and good judgment, being deployed in ways that non-accidentally realize something new and valuable (Gaut 2003: 149-151; Stokes 2008; Gaut 2009; Kieran 2014a). We should further qualify this in recognition of the fact that there can be output failures while nonetheless honoring the value condition. It is not just that the kind of thing produced can be valuable without being an unqualified success, but the process may tend toward producing something new and valuable even though this particular output is valueless. Hence, for example, Heston Blumenthal's first cookery experiments may have failed to produce anything of value yet could still have been creative in virtue of the kind of process involved.

What is it to be a creative person then? One thought might be that a creative person is someone capable of using her skills and judgment in processes that tend to produce new, valuable outputs. Yet it is one thing to have creative potential, and be capable of doing something that is creative, it is quite another to actually be creative. Furthermore, people might possess the relevant capabilities, have performed the odd creative action, and yet we would not think of them as creative people. Why not? Their creative actions may be entirely out of character. They don't seek out opportunities to be creative, they pass on being creative when opportunity presents

itself, and take no interest in being creative even on the odd occasion when they are.

Hence, we distinguish someone who has creative potential, someone who does something creative as a one-off, and someone who is a genuinely creative person.

Genuinely creative people are disposed to deploy their abilities, expertise and judgment in seeking out and tending to produce new, valuable outputs across different times and situations. While some hold that this is the only sense in which creativity is a virtue (Gaut 2014), others have argued that there is a more full-blooded sense in which creativity can be a virtue (Kieran 2014a). The further thought is that certain motivations are constitutive of exemplary creative people, which, in turn, explains why they are more admirable and more creative than less exemplary creative folk. For example, we admire Cézanne's artistic motivations in the face of indifference, criticism and outrage (Danchev 2012). His work was consistently rejected by the official Paris Salon jury and commonly ridiculed by critics, including Rochefort (1903) who described (approvingly) spectators' laughing fits at Cézanne's paintings. If Cézanne had been extrinsically motivated to pursue mainstream recognition or social status, he could have adapted his work to meet more conventional standards. But Cézanne refused to do so, which partly explains why he went on to produce some of the greatest painting in modern art. Cézanne's motivations were not just admirable, but help to explain how he came to be so radically creative. By contrast, a purely extrinsically motivated artist chasing, say, commercial success or praise, would have tended to be far more conventional and far less creative (Kieran 2014a; 2018). The world is littered with the histories of people who lived up to their creative interests at the expense of more extrinsic goods, as well as those who ended up pursuing extrinsic goods at the expense of their creativity.

In summary, a creative action involves abilities, skill and judgment in a way that tends towards producing something new and valuable. A creative person is someone disposed to seek out and perform creative acts. An exemplary (or fully virtuous) creative person is someone who is disposed to do so for the right kinds of reasons.

## **2. Epistemic Creativity, Virtue and Key Questions**

Creativity may involve epistemic states and abilities but not all creativity is epistemic creativity. Creative artists might aim to produce something beautiful, coaches to make their sport more dynamic and entrepreneurs to make money or solve social problems. In realizing those ends creatively, people draw on their beliefs, imagination, expertise and abilities. Epistemic creativity, however, is not just a matter of drawing on epistemic states and know-how. It is a matter of aiming at and realizing epistemic goals. Traditionally, for an ability, process or trait to constitute an epistemic virtue, it must aim at knowledge or, more weakly, truth via justification. Below, I address whether epistemic creativity might aim at a broader, or different, range of epistemic goals. The key point for now is that we can distinguish epistemic creativity from the broader category of general creativity by focusing on epistemic goals.

Is epistemic creativity an epistemic virtue? The literature in virtue epistemology has addressed two main kinds of epistemic virtue (Baehr 2004; Battaly 2008; Turri, Alfano and Greco 2017). According to virtue reliabilists what matters for epistemic virtue is just that a faculty, ability or disposition reliably gives rise to knowledge or justified belief. So, for example, normal perception or a disposition to reason inferentially – at or above some minimal baseline of competence - count as epistemic virtues. Although virtue reliabilists often conflate skills and dispositions, notice that there must be some level of skill or competence possessed by the agent

combined with a disposition to deploy them in appropriate circumstances. According to virtue responsibilists, by contrast, epistemic virtue requires an additional motivational requirement. The idea is not that any motivation will do but, rather, that virtue is partly individuated and constituted by specific motivations. To illustrate, open-mindedness is partly constituted by a motivation to consider seriously alternative views (Baehr 2011: 140–162; Chapter 12). But, fundamentally, responsibilism holds that all epistemic virtues have a common ulterior motivation. That motivation is typically taken to be something like valuing truth or knowledge for its own sake (Zagzebski 1996: 165–97). This motivation for truth is partly constitutive of the virtue and explains the disposition to seek out and reliably attain knowledge.

Against this background we can ask under what conditions epistemic creativity is a virtue or, perhaps more accurately, when, where and why epistemic creativity constitutes an epistemic virtue. Key questions include: i) what goal(s) does epistemic creativity aim at?; ii) how so?; iii) under what conditions is epistemic creativity a reliabilist virtue?; iv) under what conditions if any does epistemic creativity constitute a responsibilist virtue?; and v) what objections are there to our answers?

### **3. Epistemic Aims and Reliability.**

What goals does epistemic creativity aim at and how so? A thought common to many reliabilists and responsibilists is that the goal is to acquire – reliably – truths or knowledge (Sosa 2008: 225; Zagzebski 1996: 176–181). Hence, epistemic creativity might be thought to involve a reliable ability to discover new (novelty condition) truths or knowledge (value condition). However, this thought is misguided for several reasons.

Epistemic creativity does sometimes involve aiming directly at new truths or knowledge. The detective strives to be creative because he wants to discover ‘whodunnit’ or a scientist’s research focuses on discovering a new drug. Still, as Zagzebski recognizes (1996: 182), if the aim is to acquire reliably ever more new truths or knowledge, the return from epistemic creativity looks pretty meager. One reason is that epistemic creativity often involves working at the edge of what we know or how things are presently conceptualized. The very point of being epistemically creative much of the time is that – in light of our present epistemic assumptions – we cannot make sense of phenomena, anomalies, explanatory gaps, or the object of our inquiries. Epistemic creativity is often required most where knowledge gives out. So it should be unsurprising that epistemic creativity is not reliably truth conducive. Because epistemic creativity operates at the boundaries of discovery, it may get things wrong far more often than it gets things right.

One way of handling this is to hold that epistemic creativity may not reliably lead to a high percentage of true beliefs, but the kind of truths or knowledge yielded are of the most valuable kind (Zagzebski 1996: 182). Epistemic creativity may often fail to realize truth or knowledge, but when it does, the results are epistemically rich. Once the inquiries of Franklin, Wilkins, Crick and Watson gave rise to the discovery of DNA’s double-helix structure, something many other creative scientists missed, biology exponentially boomed in the discoveries of genetic science (the Human Genome project) and of biotechnology.

More fundamentally, however, epistemic creativity often does not aim directly at truth or knowledge at all. Much of the time what is being aimed at is new, epistemically promising ways of inquiring into and conceiving of the world. The range of epistemic goods this incorporates is much broader than – though includes –

truth and knowledge. To take a case in point consider what goes on in much philosophy and what you are aiming at when writing a philosophy paper. Philosophy by its nature is an epistemic endeavor. People strive to work out possible ways of conceiving of a particular problem, potential positions in the conceptual space, different ways of framing conceptualizations, the commitments and implications of some theory, what might look like important challenges, what kind of method or approach looks promising, what kind of analysis might be called for and so on. Much of the time, it is a further question as to whether this yields truth or knowledge. This is often true in our epistemic inquiries more generally. We often seek out and pursue inquiries into what look like potentially interesting ways things might be conceived or investigated. Hence the relation between epistemic creativity and truths or knowledge about the world is often indirect. Thus much epistemic creativity can be valuable yet speculative or turn out to be profoundly mistaken.

Two further points are worth emphasising. First, reliability does not entail completion of creative projects, since those projects may be highly ambitious. Rather, reliability requires performing creative acts along the way. Second, reliability admits of a distinction between quantity of output and depth. A person may reliably produce many creative works which are minor variations on what has gone before, and yet be less reliable in producing much deeper, more exploratory or transformational work. Yet reliability in the second sense can lead someone to be more ambitious in producing something transformational. Such a person may even come to be less reliable in terms of the quantity of creative work she produces, yet be producing more creative ideas, in the sense that what is produced is deeper and more worthwhile.

#### **4. Epistemic Creativity as a Disposition**



Epistemic creativity aims at generating new, worthwhile ways of inquiring about or conceiving of the object of inquiry. The question then arises, how so? Boden (2004: 3–6) distinguishes three types of creativity involving, respectively, recombining ideas, exploring conceptual space, and transforming conceptual space. James Dyson is a paragon of creatively recombining ideas. Dyson combined the mechanism of industrial cyclone separators with the vacuum to form the basis for his bagless vacuum cleaner. Note that his aim was epistemic and practical. In addition to wanting to make a better vacuum cleaner, he wanted to figure out how to do so. He conducted an inquiry. Exploratory creativity involves working through conceptual possibilities and commitments within some conceptual space. B. F. Skinner, for example, working from the idea that behavior is a function of causes and consequences developed key notions in psychology, such as operant conditioning, by showing how a few basic principles might explain many apparently complex behaviors. The most radical kind of creativity involves transforming the generative rules taken to govern conceptual spaces in ways they could not have been transformed before. Darwin's theory of evolution or Jane Goodall's work in primatology, for example, transformed their respective fields in this way.

Epistemically creative people must be able to do these things non-accidentally. While there is much that is domain-specific, some faculties or capacities may be domain general. The imagination, for example, enables us to entertain apparent possibilities or impossibilities (Gendler 2016), and is often identified as crucial for our creative abilities (Beaney 2005; Stokes 2017; Audi 2018). However, the involvement of the imagination is insufficient for someone to count as creative, given people must also exercise their discrimination and judgment (Gaut 2003; Kieran 2014a; Baehr 2018)

Consider two cases (for variations see Gaut 2012: 267; Kieran 2014a: 126–8). First, suppose that certain people sometimes imagine things that are beamed directly into their heads by the world-renowned hypnotist Derren Brown. When their minds are under his control, Brown dictates and prescribes everything that they imagine, think and write down. Furthermore, suppose that these people are only ever ‘creative’ when Brown takes over their minds in this way. Left to their own devices, these people never imagine anything interesting or come up with any new, worthwhile ideas. We learn from Plato’s *Ion* that creativity should be attributed to the source of the ideas. Brown is the source of the ideas and imaginings. And, so, even if the people who have been hypnotized are imagining—and it seems that functionally they are—imagination isn’t enough for creativity. A person’s epistemic agency must be involved in generating and evaluating imaginings for that person to count as creative. Now consider a second case. Imagine people whose imaginations consistently go into overdrive. Their imagination becomes so powerful that they keep generating ever more novel associations and thoughts. Unfortunately these people lack any judgment or editing faculty. Hence they have no idea whether or not anything they are coming up with is interesting or worthwhile. While they may possess an element that is constitutive of epistemic creativity--namely the ability to generate novel thoughts and ideas about the world--without the exercise of discrimination and judgment, there is nothing to guide their processes towards what is or might be epistemically interesting. Hence, they do not count as genuinely creative.

It follows from the above that epistemically creative people, then, must have the ability to generate for themselves new, worthwhile ways of inquiring about or conceiving of the object of inquiry. We might now ask: is it enough to possess this ability to count as a creative person? No. Why not? It is one thing to possess an

ability, it is quite another to be disposed to exercise it. You have to be disposed to be creative in order to qualify as a creative person. This is important since creativity is often mistakenly treated as if it is just an ability or set of skills (Boden 2004: 1; Ward, Smith and Finke 1999).

To bring this out consider the fact that capabilities, abilities and even expertise are not tendencies to do anything. A person might have the expertise to collect wine, the capability for athletic performance and the ability to play the piano. Yet she might have no interest in and disposition to do any of these things. Hence she is not a wine collector, an athlete or a piano-player.

Similarly, the disposition cannot be so weak that it could never be realized in anything like normal circumstances. Imagine someone who has the talent yet possesses only an extremely weak disposition toward literary writing. This might be the kind of person who goes on and on about wanting to be a writer and yet never bothers to try. In fact, the disposition is so weak that he is always much more strongly disposed to do something else (even if that is just lazing around). He does have the disposition to be creative, it is just that the disposition is so utterly feeble that there are no circumstances where he will ever act on it. Hence the disposition lacks the strength required to be a virtue. The same, by analogy, is true in the epistemic case. If someone loves the idea of being a philosopher yet never acts on any disposition to think critically or work out arguments for themselves, then, no matter how talented, she is not (yet) a philosopher. We might ask how she came by these qualities? We normally gain expertise and skills by practicing them. But this is a distinct point. Imagine that some mysterious event suddenly brought it about that you now have new athletic abilities. It would be a further question whether you are now disposed to be an athlete. No matter how able, you may just be indifferent to sports. Hence you might

never bother. If this is the case then you could be, but are not, an athlete. The thought here is that the same is true with respect to the ability of epistemic creativity. A person who has the ability but not the disposition of epistemic creativity could be epistemically creative but is not yet so. In order to be epistemically creative someone must be disposed to seek out opportunities to do something epistemically new and worthwhile, to strive to do so when opportunities arise, and to do so via the exercise of her expertise, abilities and judgment.

Now what is required for epistemic creativity to be a dispositional virtue? In my view, the disposition must be relatively general and reliable. Imagine someone who is disposed to be epistemically creative under an extremely narrow set of circumstances. She might have the disposition to be epistemically creative by thinking philosophically only when someone points a gun at her head and says ‘theorize or I shoot,’ or by writing short stories when it is 3 p.m. on a February leap day and the person to her left is wearing red. The dispositions here are insufficiently general for them to qualify as virtues, given that virtues are supposed to be strengths or good-making qualities exercised in appropriate situations across a range of circumstances.

Furthermore, to be an epistemic virtue, epistemic creativity must be reliable, broadly construed. Exercising the disposition must have some kind of non-accidental, systematic relation toward doing something epistemically new and valuable. As we saw at the end of section 3, if epistemic reliability is narrowly construed, in terms of consistently yielding new true beliefs and knowledge, then epistemic creativity looks badly placed to be a virtue. But if we think in broader terms, encompassing goods such as epistemic promise, possibility, complexity, depth and understanding, then epistemic creativity looks well placed to meet the reliabilist’s criteria. If the disposition consistently fails to do this or tends to pull away from such goods,

yielding only uninteresting flights of fancy, then the disposition cannot be an epistemic virtue. If the disposition systematically tends toward realizing the broader range of epistemic goods, then the disposition meets one of the criteria for being a virtue. Where the disposition does this with some degree of reliability across relevant circumstances in the face of pressures to do otherwise, this seems enough to qualify as an excellence. This means that my analysis of the virtue of epistemic creativity has something in common with virtue-reliabilism. We both claim that reliability (in some sense) is required for epistemic virtue.

### **5. The Motivation of Curiosity and Epistemic Creativity**

It is one thing to think of the virtue of epistemic creativity as requiring reliability, broadly construed, but should we further think of it in responsibilist terms? Virtue responsibilists hold that: a) virtue requires a motivational component; and b) that motivation must be the love of knowledge for its own sake. While the two issues are commonly run together, they need not be. In this section, I will argue that epistemic creativity requires the particular motivational component of curiosity. Thus, the view has certain affinities with responsibilism over reliabilism (which typically disavows any particular motivational requirement). But, as will become clearer in the section that follows, I will argue that the motivation need not incorporate love of knowledge for its own sake as the fundamental motive. Hence, the view is distinct from epistemic responsibilism.

Is the disposition of epistemic creativity partly constituted by a motivation of a particular sort? Answering this question may help us answer the question above: whether the virtuous disposition of epistemic creativity is partly constituted by a motivation of a particular sort. There is good reason to think that the motive of

curiosity must be partly constitutive of being epistemically creative. Arguably, to be creative, you must be motivated to learn something new, to find something out or to ask why things are as they appear to be. In order to be epistemically inventive, someone must be intrigued by something or ask and address questions in need of an answer. To think to yourself ‘now what would this be like’ or ‘why is that?’ just is to be curious about something. Consider what you have to do to write a philosophy essay. You have to ask yourself: just what is meant by certain claims, what the argument is or might be, why anyone should agree with the inferences made, how someone might object, and so on. You could write an essay by just repeating back exactly what the lecturer or the literature said. Yet this is not creative in the slightest. To be creative you have to ask yourself questions like how and why does someone conceive of things a certain way, how might they be alternatively conceived, and what relations are there to other structurally similar arguments. Then in addressing those questions, you must strive to bring your ideas together and explore the conceptual or explanatory commitments. Even if an agent works hard and possesses a range of other epistemic virtues, if she is totally incurious then she cannot be epistemically creative – and this is so even if she happens to reproduce a decent argument from elsewhere. Why not? She has not entertained any genuinely new, interesting or worthwhile thoughts. It is worth emphasising that curiosity can come in degrees. People can be mildly curious about something or extremely, obsessively curious. The thought here is that a wholly incurious agent constitutively cannot be epistemically creative. But an agent who is curious to some degree can be.

Furthermore, how curious someone is will typically impact the extent to which she experiments with particular arguments, tries to think about what might be wrong with how the relevant phenomena are conceptualized, what constitutes a good or bad

epistemic analogy in the case at hand, and so on. Thus, how curious someone is will impact just how epistemically creative someone is in a position to be. To the degree that someone lacks curiosity she will not be motivated to question or challenge assumptions, explore uncharted territory, or try things out. People who are not very curious tend not to question, experiment, or explore the possibilities for very long. The incurious look for epistemic closure more quickly and tend to be more easily epistemically satisfied. By contrast, people who are extremely curious look for puzzles, problems and explanatory gaps, explore possibilities, experiment, try working things out, and are far less easily epistemically satisfied, hence the extremely curious tend to be more epistemically creative.

It is worth noting that curiosity has a generative aspect (though see Watson 2016; Chapter 13). Curiosity is not just a matter of merely wondering about something or asking questions in the manner of a playful child who asks ‘why?’ to every response. In general, to be curious is to seek out experiences or answers and consider the extent to which they might or do satisfy what one is curious about (see, for example, Inan 2012; 2016). In epistemic inquiry, then, curiosity not only involves seeking out phenomena, questions or issues to be addressed, but trying to work out how they are or what might be solvable. Hence acting from curiosity involves taking the epistemic initiative. Again it is difficult to see how people could be curious if they do not show initiative in approaching or addressing issues. For these reasons, then, it looks like being motivated by curiosity is partly constitutive of what it is to be epistemically creative.

In summary, an epistemically creative person is motivated by curiosity to seek out and take on inquiries which explore new, worthwhile ways of inquiring about or conceiving of the object of inquiry. In doing so, the person is disposed to deploy her

abilities, expertise and judgment in ways that tend to generate new, epistemically valuable outputs (where epistemic value is to be construed in terms of a broad range of epistemic goods).

## **6. Exemplary Epistemic Creativity v. Responsibilism**

If the above is right, the disposition of epistemic creativity has a constitutive motivational component. Given responsibilists, contra reliabilism, hold that every epistemic virtue has a distinctive motivation, then in this respect my analysis is in agreement with responsibilism. I have identified a motivation, namely curiosity, that is distinctive of epistemic creativity. However, responsibilism further holds that all epistemic virtues require an ultimate motivation to pursue knowledge for its own sake. As will become clear in this section, I think this is false. Thus my analysis of epistemic creativity as a virtue does not amount to responsibilism.

Must epistemic creativity be fundamentally motivated by knowledge for its own sake to be virtuous? This is far from obvious so it is worth starting off with a healthy degree of skepticism. This is not to deny that many epistemically virtuous creative people are fundamentally motivated by the love of knowledge. Marie Curie's studies of mysterious uranium rays, using electrometers designed by Pierre Curie, prompted the radical thought that radiation did not depend on the arrangements of atoms but the atom itself. Marie Curie's diaries from the period talk of the difficult conditions, the exhausting nature of the work, and the epistemic excitement of their research (Pasachoff 1996). The Curies were driven by the desire for epistemic achievement for its own sake. But consider the case of Donald Hopkins. As a Morehouse College chemistry undergraduate he visited Egypt and was struck by how severe widespread eye infections were (Oakes 2000: 347). Hopkins decided "then and



there that I wanted to work on tropical diseases” to alleviate human suffering (PBS 1998). He returned home, worked hard, transferred to the University of Chicago to study medicine, became the only black person to graduate in his cohort (Yeoman 2017), and devoted his life to eradicating diseases such as Smallpox and the now near extinct Guinea Worm disease. If Hopkins had been solely motivated by the desire to alleviate suffering, would we think he thereby lacked epistemic creativity? No. Would his epistemic creativity be epistemically non-virtuous? No. Contra responsibilism, virtuous epistemic creativity does not require that someone be motivated by knowledge for its own sake. This kind of case may further be taken to show that someone can be purely extrinsically motivated (i.e. for some further non-epistemic end or reason) and yet possess the virtue of epistemic creativity, provided that the extrinsic motivation makes them curious. Or, to put the point a different way, epistemic creativity as a virtue is not a full-blown responsibilist virtue since motivation for the sake of knowledge is not required for the virtue.

There is, however, an alternative possibility. We might see this as a slight weakening of the responsibilist criteria on virtue. It seems constitutive of exemplary epistemically creative people that they are motivated by epistemic values and respect inquiry relevant epistemic techniques, norms and goals. Even where the motivating significance of epistemic ambition is dependent on some further non-epistemic end, the inquiry must be pursued in a particular non-wholly instrumentalized way. Exemplary epistemic creative people are motivated to realize – and honor – epistemic goals and norms. This need not be the most fundamental motivation but the motivation must be there for them to be exemplary (Kieran 2014a; Baehr 2018)

Consider a basic contrast. Suppose that a scientist’s inquiry is pursued for the sake of making people’s lives better in some way, and she sincerely, justifiably

believes that there are decent grounds for pursuing the line of inquiry. Yet in conducting her inquiry, she fails to do justice to the standards and values of decent epistemic investigation. This might be manifest in a whole host of ways such as being culpably careless in not running certain tests, in failing to ensure proper experimental conditions, cherry picking data, dismissing negative results, filing away inconclusive data, or even in extremis faking experimental data. By contrast, the fully epistemically virtuous are strongly motivated to do justice to strictly epistemic constraints and abide by epistemic norms even when the value of what they are doing depends on realizing a non-epistemic goal.

Perhaps, this explains why exemplary epistemically creative people – or the fully virtuous – are not just more admirable, in being well-motivated, but tend to be more reliable in being epistemically creative in more interesting, worthwhile ways than the purely extrinsically, instrumentally motivated. Hence, for example, Diederik Stapel, a renowned psychologist who faked experimental data (Tilburg University 2012), was creative in thinking up hypotheses and experimental designs but his epistemic creativity was clearly not exemplary or fully virtuous. If Stapel had been less arrogant or less concerned with chasing recognition, and more properly motivated by epistemic values then, instead of producing flawed papers, he would have been both more exemplary and produced better, more worthwhile work.

To summarise, reliabilism is mistaken given that epistemic creativity constitutively involves the motivation of curiosity. Responsibilism is mistaken given that virtuous epistemic creativity does not require the ultimate motivation to be love of truth or knowledge for its own sake. Epistemically creative people are motivated by curiosity to seek out and take on inquiries that engage their epistemic agency in ways that tend to generate something new and epistemically valuable. This is what it

is to possess the disposition of epistemic creativity. What is it for the disposition to be virtuous? It must be motivated to respond to and respect relevant epistemic features, constraints, duties and norms in a non-instrumentalized way (even where the value of being epistemically creative is taken to depend more fundamentally on some further non-epistemic end or value). Exemplary or fully virtuous epistemically creative people are this way to a high degree even in the face of strong pressures to do otherwise. Hence, exemplary epistemically creative people are both highly admirable and tend to generate new, more interesting, and more worthwhile instantiations of epistemic goods.

## **7. Objections**

One worry is that people sometimes just stop being creative (Gaut 2014: 192–3). Virtues are exercised in appropriate circumstances when opportunity presents itself. Yet sometimes people stop being epistemically creative. A few things can be said here. First, creative people often don't stop being creative but, rather, find new outlets. People may give up scientific careers to set up a business, teach, start a family, or retire and are creative in the ways they do so. Second, exemplary epistemically creative people just are those fundamentally driven by curiosity and the valuing of epistemic norms so they tend not to stop. Third, possessing a virtue does not rule out the possibility of losing it. I can lose much of my epistemically creative drive through lack of opportunity, deterioration in ability (think of Alzheimer's), or diminished curiosity due to other things becoming more important in my life.

A different kind of objection focuses on the twin aspects of admirability and reliability. Consider a young scientist Emily who is passionate about and loves her work. She may be somewhat unreliable on particular projects she cares little about or

procrastinate on those she cares too much about. By contrast, Ella works in the lab for extrinsic rewards such as income and social status (for artistic analogues see Kieran 2014a and Gaut 2014: 191-194). Ella's experimental research may turn out to be more reliably creative even though she is not motivated by the pursuit of knowledge. Emily may be more admirably motivated, yet Ella may be more creative.

Now extrinsic motivation is often empirically accompanied by intrinsic motivation. It is important to many academics, scientists and artists that they are paid and recognised for their work, yet the main motivation is the love of what they do, and this helps them to keep producing more articles, experimental designs and works. Exemplary epistemic creativity does not require that the admirable motivation must be the sole motivation. It is also true that the intrinsically motivated clearly can care too much in various ways. But if this is caring too much, then this is disproportionate and so lacking true epistemic virtue. Exemplary creative people are not disproportionate in their feelings and possess the ability to regulate and control them. Consider a further empirical question: how do intrinsic as opposed to purely extrinsic motivations tend to pan out diachronically? If over time someone no longer feels the pull of intrinsic epistemic values and becomes purely extrinsically motivated, then she may tend to become alienated from her epistemically creative activity. This means it will increasingly become harder to perform the relevant epistemically creative tasks. In other words, such a state of affairs extending over time tends to lead to phoning the work in, lower epistemic creative performance, unreliability, and uncreative work.

What about cases where people are creative in the service of bad moral ends (Gaut 2010: 1039–40)? Psychologists might be epistemically creative in coming up with ingenious ways for the CIA to torture suspects (assume this is immoral). One argument claims that where the upshot lacks positive value, there is no genuine

creativity (Novitz 2003: 185-187), while another holds that creativity relative to some kind, torture techniques say, cannot be valuable if the kind is a bad one (Gaut 2018). A different strategy holds that the scientists show epistemically virtuous creativity but not morally virtuous creativity. Hence, we may admire epistemically virtuous creativity in the service of bad moral ends (Kieran 2014b: 228–9). It is just that our positive attitude toward epistemically virtuous creativity is severely qualified by the recognition that the ends are morally bad. Alternatively, the virtue theorist could distinguish between the disposition constituting epistemic creativity and the virtue of epistemic creativity. The scientists show genuine creativity, but the creativity shown is not fully virtuous. Exemplary epistemically creative people will only pursue inquiries or epistemic goals that are morally permitted or good (Kieran 2014b: 229).<sup>1</sup>

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