

12

Creative Reasoning

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*What a piece of work is a man! How noble in reason, how infinite in faculty!
In form and moving how express and admirable! In action how like an angel, in
apprehension how like a god! The beauty of the world. The paragon of animals.*

—*Hamlet* (2.2.303–07)

1. Introduction

Can reasoning create justification? Prevailing philosophical opinion says that it can't, and that reasoning is a mere tool for transmitting justification from one belief to another. But prevailing opinion is wrong. Inference can create justification. *Inferential creationism* is true. That is my thesis.

Creationism has recently served as a bell wether of infinitism's prospects. Infinitists have aligned their view with creationism, and their opponents have aligned against it. But this is a mere diversion. The truth of creationism neither advantages nor disadvantages infinitism. Creationism can and should be a common ground of non-skeptical epistemology.

Here is the plan. Sections 2–4 show that inferential creationism isn't the province of infinitism; in the process, I distinguish several versions of inferential creationism. Section 5 rebuts objections to creationism. Section 6 advances three creationist arguments. Section 7 introduces some examples that might be worth thinking about in relation to creationism.

2. Reasoning is Critical

Infinitists are admirably ecumenical, acknowledging that rivals, especially foundationalism, have identified genuine and important epistemic statuses (Klein 2005, 2011a; Aikin 2010).¹ But infinitists also insist that foundationalism isn't the whole

¹ Klein has consistently and forthrightly acknowledged insights from not only foundationalism, but also coherentism and Pyrrhonian skepticism. Aikin adopts elements of foundationalism.

story. Foundationalists say that there are proper stopping points in the chain of reasons a belief is based on, most notably perceptual experience, which we share with our cousins throughout the animal world. But for some important epistemic statuses, infinitists think, stopping points exude an air of *arbitrariness* or *indignity*. We seem to aspire to something nobler, and sometimes we take ourselves to rise higher. Infinitism taps into this aspiration and self-conception: *noble in reason, infinite in faculty*.

To get a sense of this, consider briefly a couple leading arguments for infinitism. First, the interrogation argument for infinitism concerns “the most highly prized form of true belief,” or the kind of knowledge that human adults take themselves to be capable of (Klein 2011b). Such knowledge requires *full justification*.² Distinctively human knowledge is distinguished by the importance of reasoning in attaining full justification: we make our beliefs fully justified by reasoning in support of them. Reasoning is *partly constitutive* of full justification, and so is essential to it. A calculator might know that $2 + 2 = 4$, and a greyhound might know that his master is calling, but neither the calculator nor the greyhound reasons in support of their knowledge. Their knowledge is merely mechanical or brute. Adult humans are capable of such unreasoned knowledge, but we are also capable of a more dignified sort of knowledge involving full justification, replete with the value added by reasoning.

The interrogation argument is motivated by a specific version of the regress problem, which emerges from an imagined interrogation. Suppose you believe that Q. Then someone asks you a legitimate question concerning the basis of your belief that Q. You respond by citing reason R1. You are then legitimately asked about your basis for believing R1. You cite reason R2. Then you are legitimately asked about your basis for believing R2. A pattern is emerging. How, if it all, can the reasoning resolve itself such that you’re fully justified in believing Q? Infinitists answer: by continuing indefinitely. In principle there is no limit to the interrogation because every belief is susceptible to legitimate questioning. So potentially indefinitely long reasoning seems to be *exactly* what is needed for the reasoning to result in full justification.

Second, the proceduralist argument for infinitism begins from the premise that knowledge is a “reflective success” (Aikin 2009). Reflective success requires thinking carefully and being able to make our careful thinking explicit. To make our careful thinking explicit is to state our reasons. And for a reason to legitimately figure into our careful thinking, we must have a reason for thinking that it is true in turn. So if you know something, then you can properly answer all questions about your belief and your reasons. But in principle there are an infinite number of questions about your belief and your reasons. And no proper answer will implicate you in question-begging circularity. So in principle you need an infinite number of answers.

² For an antecedent that argues for infinitism on the ground that it can best explain *complete justification*, see Fantl 2003, and Turri 2010a for a response.

These infinitist arguments emphasize our rational agency in creating full justification or human knowledge or some other important positive epistemic status. These things don't just happen to us; they don't just fall into our laps. Reasoning is something we can and must do to help create these intellectual goods.

Infinitists aren't alone in focusing on such goods. Interest in valuable cognitive achievements involving reasoning, effort, and creativity has a long history in epistemology, even though interest in simpler cognitive achievements has loomed large lately. But we don't need to choose between the two. As Linda Zagzebski (forthcoming) writes:

What Plato called "*episteme*" and Aquinas called "*scientia*" was a state that demanded considerable reflection and cognitive effort. What most contemporary philosophers call "knowledge" does not. So contemporary epistemologists typically treat simple, true perceptual beliefs in ordinary conditions as knowledge, whereas typical ancient and medieval philosophers did not. I suspect that there is no determinate answer to the question whether Plato and Aquinas differ from contemporary philosophers on the analysis of the same epistemic state, or whether ancient and medieval philosophers were simply talking about a different epistemic state than the one that has received the most attention in contemporary epistemology. But I also think that the answer to this question is not very important. If there are a number of good kinds of distinguishable states of believing the truth, it is worth calling attention to them, whether or not they all fall under the class of states of knowing.

And of course Aristotle also recognized a special category of knowledge that required reasoning: scientific knowledge. Aristotle considered scientific knowledge to be "the highest expression of [human] rationality" (Bolton and Code 2012, p. 52).

With this ecumenical spirit in mind, from now on I will often speak simply of "knowledge", "justification", or "warrant", trusting that they'll be understood in the way infinitists prefer.

3. Reasoning is Compatible

Suppose we agree that reasoning is required for and partly constitutive of human knowledge, full justification or warrant. Does this support infinitism? I will argue that it doesn't. Let's start by getting clearer on the minimal commitments of the views in question.

If you supposedly know that A, then the question "How do you know A is true?" arises, and threatens to renew itself repeatedly, as we saw earlier when briefly considering the two arguments for infinitism. The challenge is to explain how, if at all, the pattern might unfold so as to vindicate the initial assumption that you actually do know that A is true.³ There are exactly three possible patterns, which can be sorted

³ The same goes for the supposition that you have a warranted or (fully) justified belief that A is true. For convenience I will typically speak only of knowledge or of justification or of warrant, but what I say typically applies to them all. Exploring residual differences lies beyond this paper's scope.

neatly by asking two questions.⁴ *Does the pattern ever circle back (to repeat an earlier item)?* If it does, then the pattern is circular; if it doesn't, then it's non-circular. Suppose we have a non-circular pattern. *Does the pattern ever end?* If it does end, then the pattern is finite and non-repeating; if it doesn't end, then the pattern is infinite and non-repeating. Thus we have three possible patterns: circular, finite, and infinite.

Sceptics deny that any of the three patterns can enable knowledge; non-sceptics accept that at least one can. Non-sceptics have up to three options:

Circulism: circular patterns can enable knowledge.⁵

Finitism: finite patterns can enable knowledge.⁶

Infinitism: infinite patterns can enable knowledge.

These minimal options are *not* mutually exclusive: the conjunction of circulism, finitism, and infinitism is logically consistent. But theoretical purity is tempting, so non-sceptics might adopt additional theses—perhaps more deserving of the suffix *-ism*—that render their views mutually exclusive.

Pure circulism: only circular patterns can enable knowledge.

Pure finitism: only finite patterns can enable knowledge.

Pure infinitism: only infinite patterns can enable knowledge.

Between minimalism and theoretical purity lie further permutations. We might be amenable to more than one form of pattern, provided that our favored one is also present. Thus we get:

Strong circulism: knowledge is enabled only when at least one circular pattern is present.

Strong finitism: knowledge is enabled only when at least one finite pattern is present.

Strong infinitism: knowledge is enabled only when at least one infinite pattern is present.

All three minimal options are compatible with the view that reasoning is required for and partly constitutive of knowledge. And all the pure and strong options are compatible with it too. Consider:

⁴ This isn't the unique acceptable way of dividing up all possible patterns, but it suffices for present purposes. For example, we might start with, "is the pattern finite?," then ask, "does it ever circle back?". We might end up with infinite series that contain loops along the way. Thanks to Andy Cling for discussion here.

⁵ I avoid the label "coherentism" because it is plagued by imprecision and baggage.

⁶ I avoid the label "foundationalism" because it too is plagued by imprecision and baggage. See Sosa 1980 and 1983 for a brilliant discussion of the compatibility of coherentism and (some forms of) foundationalism, as well as (some forms of) foundationalism and infinite regression.

Pure reasoned circularism: only circular patterns involving reasoning can enable knowledge.

Pure reasoned finitism: only finite patterns involving reasoning can enable knowledge.

Pure reasoned infinitism: only infinite patterns involving reasoning can enable knowledge.

Strong reasoned circularism: knowledge is enabled only if at least one reasoned circular pattern is present.

Strong reasoned finitism: knowledge is enabled only if at least one reasoned finite pattern is present.

Strong reasoned infinitism: knowledge is enabled only if at least one reasoned infinite pattern is present.

All six views are self-consistent. So when we're told, "Infinitists see an important type of justification as emerging when reasons are given for our beliefs" (Klein 2011a, p. 94), we should be careful not to conclude that circularists or finitists must overlook the importance of such justification.⁷

4. Reasoning is Creative

All three structural views can embrace the importance of reasoning, so infinitism gains no advantage there.⁸ But finitists have not emphasized it, whereas infinitists have. Moreover, finitists have tended to deny something further that infinitists have endorsed: that reasoning is *creative*, that it can *originate* warrant. This is inferential creationism. (In what follows, I use "reasoning" and "inference" interchangeably. And I won't explicitly distinguish between creationism about justification, warrant or knowledge.) So if inferential creationism is true, then infinitism might gain an advantage here. Grant that inferential creationism is true. Does this spell trouble for finitism?⁹

Creationism comes in weak, strong, and pure forms.¹⁰ The weak form says that inference can amplify already existing justification during transmission. The strong form says that inference can create justification where none existed before. The pure form says that inference is the only origin of justification. More precisely:

Weak inferential creationism: inference can amplify justification: reasoning only from a premise justified to degree n can result in a conclusion justified to degree $n + m$, where $n > 0$ and $m > 0$.

⁷ Klein notes soon after, "hybrid views are possible" (2011a, p. 95).

⁸ Turri 2009 presses a very similar point in response to Klein 2005.

⁹ Cling 2004 argues that in order for infinitist justification to be appropriately connected to truth, infinitism must be supplemented in a way that undermines its motivation. But if infinitism is uniquely positioned to explain the importance of reasoning for justification, then it would still be motivated.

¹⁰ In section 6.2 I identify a further form.

Strong inferential creationism: reasoning can create justification *ex nihilo*: reasoning only from a premise justified to degree 0 can result in a conclusion justified to a degree greater than 0.

Pure inferential creationism: reasoning and only reasoning can create justification.

Every view about knowledge or justification faces a question: where does it originate? How is it produced? Finitists have typically answered this question by appealing to nondoxastic mental states that we often seem to base our beliefs on, including perceptual experiences, introspective experiences, and rational intuitions. These nondoxastic states provide proper stopping points in the regress of reasons: they are an epistemological foundation. This way of supplementing finitism goes all the way back to Aristotle, who identified experience and intuition as an “originative source” of “the skill of the craftsman and the knowledge of the man of science” (*Posterior Analytics*, 100a5, 72b18–24).

Finitism is often paired with a distinctive view about the epistemological role of inference, *pure inferential instrumentalism*: inference can transmit justification but cannot create it.¹¹ Inference is an instrument of transmission, not creation. This view seems to conflict with inferential creationism (more on this in section 6.2). Setting the tone as usual for finitism, Aristotle seems to reject all forms of inferential creationism.¹² He rejects pure creationism when he writes: “Our own doctrine is that not all knowledge is demonstrative; on the contrary, knowledge of the immediate premises is independent of demonstration” (*Posterior Analytics*, 72b19–20). And he arguably also rejects strong and weak creationism when he writes: “We must know the prior premises from which the demonstration is drawn” (72b22), and: “Demonstration must be based on premises prior to and better known than the conclusion” (72b 25–6). More recently, Carl Ginet puts the point directly: “Inference cannot *originate* justification, it can only transfer it from premises to conclusion” (2005, p. 148).

But finitists aren’t committed to any of this. Finitism does not entail pure inferential instrumentalism. Pure instrumentalism is an additional and optional thesis.

¹¹ Klein 2011b calls this “The Inheritance Principle.” See also Plantinga 1993, p. 76.

¹² I stress “seems” in reporting this interpretation of Aristotle (following Klein 2011b). But I actually don’t think this was Aristotle’s view. I think that Aristotle was, pretty much explicitly, a strong creationist about scientific knowledge (perhaps better referred to as *understanding*). Without getting bogged down in Aristotle exegesis, I’ll briefly explain my rationale for this attribution. On Aristotle’s view, proper inference from common perceptual knowledge ultimately leads to a new kind of achievement, scientific knowledge. Scientific knowledge is based on premises that aren’t scientifically known. Consider how two leading contemporary scholars explain Aristotle on this point. “Experience as such does not involve explanatory or causal knowledge. . . . [Although] the attainment of causal knowledge about the physical world depends upon general perceptual knowledge, scientific knowledge involves *reasoning* to and from explanatory principles and hence goes well beyond what the perceptual faculty itself can provide” (Bolton and Code 2012, pp. 51–2). And “Although the use of our perceptual capacities provides a complex and rich array of perceptual and experiential knowledge of that world, this higher cognitive achievement [i.e. ‘systematic understanding’ or ‘scientific knowledge’] requires the use and exercise of distinctly *intellectual* capacities, over and above what can be provided by the perceptual faculty alone” (pp. 52–3).

Indeed, finitism is consistent with *all three* forms of inferential creationism, just as circulism and infinitism are. Granting that reasoning originates warrant confers no advantage on infinitism. Clear-headed finitists who reject inferential creationism will do so because they think it's implausible or that there are independent arguments against it, not because it's inconsistent with finitism.

5. Uncreative Bias

Inferential creationism is a very unpopular view, especially among contemporary finitists. Is its unpopularity deserved? This section evaluates the case against it. First I argue that the typical non-skeptical finitist cannot plausibly reject inferential creationism, because it is no less plausible than the finitist's own preferred strategy for explaining how warrant originates. Then I rebut two other objections to inferential creationism.

5.1. Creation, inferential and otherwise

The basing relation is the relation that obtains between a belief and the reason it's based on.¹³ One of the relata, the *terminus*, is always a belief. Call this the *terminal belief*. The other relata, the *prompt*, is a belief only sometimes: there are doxastic and nondoxastic prompts. A doxastic prompt is ordinarily called a *premise*, and its terminus a *conclusion*. We call the basing relation an *inference* when its prompt is doxastic: inferences proceed from premise to conclusion. Inference is just basing with a doxastic prompt. Nodoxastic prompts include perceptual experiences and rational intuitions. We don't have an ordinary name specifically for the class of nondoxastic prompts. (We do call them *reasons*, *grounds*, or *bases*, but the same is true of doxastic prompts.) Although it's less natural to label the terminus of a nondoxastic prompt a *conclusion*, it can be acceptable to do so.¹⁴ (None of the points I make here depends on supposing that the terminus of a nondoxastic prompt is a conclusion, properly so-called.)

Finitists have in fact always accepted that the basing relation can create justification. That is, they accept *basing creationism*. In fact, they accept a strong version of it:

Strong basing creationism: basing can create justification *ex nihilo*: a nondoxastic prompt with justification of degree 0 can result in a conclusion justified to a degree greater than 0.¹⁵

¹³ Turri 2011 defends a theory of the basing relation.

¹⁴ Nodoxastic prompts also include desires, wishes and emotions. Ordinarily we call the basing relation *wishful thinking* when prompted by a desire or wish, and *emotional reasoning* when prompted by a desire. Cognitive scientists include all of the above in the category of *motivated inference*.

¹⁵ Some finitists might also accept *pure basing creationism*: basing and only basing can create justification. I struggle to see any motivation for this view.

To see why finitists accept this, first let's make a standard distinction between propositional and doxastic justification.¹⁶ Roughly, you are propositionally justified in believing Q just in case you have good reason to believe it. And your belief that Q is doxastically justified just in case (i) you are propositionally justified in believing Q, and (ii) you properly base your belief on the good reason you have to believe it. Friendlier terminology than "propositional" and "doxastic justification" would be "justifiable" and "well-founded."¹⁷ (This is an indication that the distinction has a pre-theoretical basis.) I have defined these categories in terms of *belief*, but that's just for convenience. Attitudes of acceptance other than belief can also be justifiable and well-founded.¹⁸ But as the name indicates, doxastic justification attaches to doxastic states, not other things.

We could distinguish at least two versions of every principle mentioned so far concerned with justification. I won't explicitly do that. Let's just instead have doxastic justification in mind when reading them.¹⁹ The current controversy over creationism focuses on doxastic justification. It began when philosophers started asking whether infinitism could offer a plausible account of doxastic justification (see Klein 2007, Bergmann 2007, Turri 2009; see also Bergmann 2013).

Next let's consider some typical examples of doxastically justified belief offered by finitists.

Jack feels a severe pain and says "ouch, that hurts!" Let's say that Jack at that time believes that he is in pain and that this belief is based on his awareness of his experience of pain and is not inferred from any other beliefs he has. Foundationalists will think that this belief of Jack's is noninferentially justified and is a perfect example [of a properly basic belief]. (Bergmann, Chapter 2, this volume.)

At least in the typical case, when you have a clear view of a bright red object, then your experience itself justifies the belief that you are seeing something red. That belief is the proper response to that experience. (Feldman 2003, p. 77.)

Consider the proposition that nothing can be red all over and green all over at the same time. Suppose that this proposition is presented for my consideration. After extremely brief consideration, I accept the proposition. [Clearly] I have a good, indeed an excellent reason for thinking that the claim in question is true. But what is the basis for this justification? [It] apparently depends on nothing beyond an understanding of the propositional content itself, a proposition whose necessity is apprehended in this way. It is common to refer to the intellectual act in which the

¹⁶ These are serviceable first approximations. See Turri 2010b for further refinement and discussion.

¹⁷ Feldman and Conee 1985.

¹⁸ Other eligible states are disbelief, withholding, assuming, presupposing, taking it for granted, and perhaps also trust and faith.

¹⁹ We could speak more generally of *available* versus *well-grounded* positive epistemic status, where propositional justification is a species of available positive epistemic status, and doxastic justification is a species of well-grounded positive epistemic status.

necessity of such a proposition is seen as an act of *rational intuition*. (Adapted from BonJour 1998, pp. 101–2.)²⁰

Consider the following sentence: (A) Anything that lasts exactly one hour lasts exactly sixty minutes. . . . Someone who does understand what sentence A says, and therefore believes it, is justified in believing it. The fact which constitutes his being justified in believing it is simply the fact that he understands what the sentence says. (Ginet 2005, p. 141.)

And consider a more general theoretical account of justification offered by a leading finitist.

One has noninferential justification for believing P when one has the thought that P *and* when one is acquainted with the correspondence between the thought that P and the fact that P. The idea is that when one has immediately before consciousness both the truth bearer and the truth maker one has all one needs, all one could ever want, by way of justification. (Fumerton 2006, p. 65.)

So finitists clearly think that beliefs can be doxastically justified when based on introspective and perceptual experience, rational intuition, linguistic comprehension, and more generally direct acquaintance with facts. But these are all nondoxastic states: none is a belief or belief-like state of acceptance. (Some are even nonmental states.) So they can't be doxastically justified. Yet basing a belief on them creates doxastic justification. This is strong basing creationism.

Finitists object to inferential creationism on the grounds that “there is nothing in the inferential relation itself that contributes to making . . . beliefs justified, nothing that explains why any of them is justified.” (Ginet 2005, p. 149.) But the basing relation itself is the same whether the prompt is doxastic or nondoxastic, so if there's nothing in that relation when prompted by belief, then there's nothing in that relation when prompted otherwise. Finitists also object to inferential creationism on the grounds that “one can't get something from nothing.” (Fumerton 2006, p. 39.) But they accept that the basing relation sometimes gives us something for nothing, so this is just special pleading.

As Thomas Reid pointed out, it is one thing to be a thorough and consistent skeptic, but quite another to be a mere semi-skeptic. Semi-skeptics about creationism must answer a question: if the basing relation can create doxastic justification when the prompt is nondoxastic, then why can't it when the prompt is doxastic? That is, if strong basing creationism is true, then why isn't strong inferential creationism true too?

5.2. *If that were true . . .*

In this subsection I consider two objections to inferential creationism. Neither succeeds. I emphasize that both objections were made in the context of evaluating a view combining elements of infinitism and creationism. Neither objection was

²⁰ Everything here is direct quotation, but it is heavily abridged. BonJour expands what could be a very simple and concise explanation over the course of multiple pages. I left out more than half a dozen ellipses.

offered in light of the distinctions made here; both objections might be more effective when directed at an admixture of creationism and infinitism; and their authors might not endorse them as they are presented here.²¹ Considering them might prove instructive nonetheless.

The first objection is that if inferential creationism were true, then

one could start with a belief that is totally unjustified . . . and by spinning out a long enough chain of inference from it reach a belief that has the degree of justification required for knowledge. (Ginet 2005, p. 155.)

The objection misfires if directed at either weak or strong inferential creationism. Neither view entails that inference alone can create knowledge-level justification. It might work against non-skeptical versions of pure infinitism, though, which is probably how it was intended.

Here is the second objection:

Suppose you have two beliefs, B1 and B2, both of which are not justified at all, because neither of them is based on any reasons or evidence at all. And suppose also that B2 implies B1. Can B1 become justified to some degree solely in virtue of your later inferring it from the still unjustified belief B2, which implies it? It seems clear that the answer is “no.” Inference from reasons doesn’t yield any justification if those reasons have nothing going for them, epistemically speaking. (Bergmann, Chapter 2, this volume.)

This objection faces two problems. First, it is slightly misdirected. Strong inferential creationism says that inference can generate doxastic justification even when the prompt has no doxastic justification. Weak creationism says that inference can amplify doxastic justification. Neither view entails that inference can generate doxastic justification even when the prompt has *no redeeming epistemic property at all*. So let’s adjust the end of the objection to read, “. . . if those reasons have no doxastic justification themselves.”

This brings me to the second problem. By parity of reasoning we could equally well refute basing creationism in general:

Suppose you’re in two mental states, M1 and M2, both of which are not justified at all, because neither of them is based on any reasons or evidence at all. And suppose that M2 supports M1. Can M1 become better justified to some degree solely in virtue of your later basing it from the still unjustified M2, which supports it? It seems clear that the answer is “no.” Basing from reasons doesn’t yield any justification if those reasons have no doxastic justification themselves.

But strong basing creationism is a staple of finitism, endorsed by Aristotle, Bergmann, Ginet, Fumerton, and many others who reject inferential creationism. This reiterates a lesson already learned: it’s not easy to find a principled way to reject inferential creationism while accepting nondoxastic basing creationism.

²¹ Both arguments are made against Klein’s views. I think the objections are partly motivated by unclarity about exactly how much of a role Klein assigns to reasoning in creating various positive epistemic statuses.

6. Creative Evidence

Suppose I'm right that inferential creationism's unpopularity isn't due to compelling objections. It doesn't follow that inferential creationism is true, or that we should accept it. Perhaps it's nevertheless so implausible on its face that it deserves to *die a quick death by incredulous stare*. Is there any positive reason to accept inferential creationism? Yes. This section presents three arguments in its favor.

6.1. Parity

Here is my first argument. It recycles some material introduced earlier.

Parity

1. If basing creationism is true, then inferential creationism is true. (Premise)
2. Basing creationism is true. (Premise)
3. So inferential creationism is true. (From 1 and 2)

Nearly every non-skeptical finitist who has ever written accepts line 2. The evidence for line 1 has already been mentioned: the basing relation itself is the same whether the prompt is doxastic or nondoxastic, so if there's nothing in the relation that can create justification when the prompt is doxastic, then there's nothing in it when the prompt is nondoxastic either.

I imagine the following objection to line 1. The basing relation always has the same potential to create doxastic justification: if it relates your belief B to a good reason for you to hold B, then B is thereby doxastically justified. Beliefs can be good reasons only if they are doxastically justified. But nondoxastic states can be good reasons even if they aren't doxastically justified. For they can't be justified or unjustified: they are beyond the pale of justification.

I have two responses to this objection. First, even if granted in its entirety, it rules out only strong and pure inferential creationism. It doesn't affect weak creationism.²²

Second, granting that nondoxastic states are beyond the pale of justification, we're left to wonder how they could play the role of *good reasons*. (This is related to, but not quite the same as, the intuition underlying one horn of "the Sellarsian dilemma" for foundationalism. See Sellars 1963: ch. 5 and BonJour 2003.) A very popular answer is that they can be good reasons because they are reliable indicators of the truth (Sellars 1963, chap. 5; Sosa 2003; Goldman 2008). But beliefs can be reliable indications too, so this fails to distinguish nondoxastic states from beliefs. To be persuasive, the objection should be supplemented by an explanation of why nondoxastic states can be good reasons *which doesn't also apply to beliefs*.

A more radical solution would be to reject line 2. There are at least three ways to do that without courting skepticism. (Of course there may be others too.) The first way is to embrace Berkeleyan idealism. Worldly facts are actually doxastic states: beliefs in

²² It doesn't affect minimal creationism either; see section 6.2.

the mind of God. (Alternatively: beliefs of the community; or the world is just brutally constituted by such mental states.)²³ All such beliefs amount to propositional knowledge. Our most basic beliefs would thus be based on something that is already optimally doxastically justified. Pure basing instrumentalism is then all that's needed, and the pressure to accept inferential creationism is thereby alleviated. The second way is to revive a largely moribund brand of foundationalism, *doxastic creationism*: the very act of forming beliefs with a certain content imbues them with some amount of justification (Chisholm 1980, Davidson 1983, Harman 1995). If this is true, then basing creationism isn't needed to explain basic justification, and again, the pressure to accept inferential creationism is alleviated. The third strategy is to leave the basing relation to one side, and instead contend that beliefs acquire justification superveniently by other means.²⁴ On this view, strictly speaking it is *never* because of the basing relation that beliefs are justified. Rather, it is because beliefs are, say, the result of a reliable cognitive process, or of a virtue, or of a design plan aimed at truth, or because they would be approved by a suitable observer, or some other relation.

I doubt that the first strategy for rejecting line 2 will be attractive to many. But the second strategy might be. Many have expressed sympathy for views that would lend doxastic creationism support.²⁵ However, we should remember that doxastic creationism is consistent with both basing and inferential creationism. And since *belief-formation* is a constitutive component of both basing generally and inference specifically, doxastic creationism might *entail* both basing and inferential creationism. So this strategy for undermining line 2 of the argument might be doomed from the start. The third strategy strikes me as peculiar and difficult to evaluate. I grant that it's a possible view. But so is the view that the basing relation is part of the relevant subvenient basis. I don't understand the motivation for simply relegating the basing relation in this way. Moreover, what assurance is there that beliefs couldn't equally well gain justification superveniently through noninferential relations to unjustified beliefs? Perhaps having certain unjustified beliefs enhances our overall reliability, or enhances virtue, or is part of the relevant design plan, or would be approved of by the suitable observer. If so, then what has been achieved, other than a clever leap from the proverbial frying pan?

6.2. *Creative instrument*

Pure inferential instrumentalism is a chimera. It says that inference can transmit justification but can't create it. That can easily sound like a view worth considering.

²³ McDowell's (1994) view that the conceptual is "unbounded," or that we can "embrace" facts in thought, isn't enough to sustain the present suggestion. For the present suggestion to work, the world needs to be not merely conceptual but literally doxastic.

²⁴ As suggested to me by Andy Cling.

²⁵ "Belief is in its nature veridical," said Davidson (1983, p. 146) and, long before that, Santayana wrote, "Intelligence is by nature veridical" (1923, p. 9). If the mind does essentially tend toward true beliefs, that does lend support to doxastic creationism (but see Foley 1983).

But the only reason it doesn't immediately sound utterly ridiculous is that we don't interpret it literally. Because, literally, inference obviously does not transfer justification, whereas it clearly does create justification.

Suppose that my belief that P is justified. And suppose that I am fully justified in believing that P entails Q. And suppose that I competently deduce Q from P. *Of course* my concluding belief in Q is thereby justified—and presumably to the same degree, or almost the same degree, as my belief in P. But this is *not* because the justification attaching to my belief that P gets *transmitted* to my belief that Q, thereby leaving my belief in P *unjustified!*²⁶ Justification isn't a quantity transmitted and conserved by the inferential relation. The justification for my belief that Q didn't used to be attached to my belief that P. Nor does the justification for my belief that P diminish—in perfect inverse proportion—as my belief that Q becomes justified. Rather my belief that P remains just as justified as it was before, for the same reasons as before, and my belief that Q becomes justified to a similar degree. So the total amount of justification in the system has been increased: *more justification has been created*, courtesy of the inferential relation. Any view that entails otherwise is thereby refuted.²⁷

So the literal interpretation of pure inferential instrumentalism straightforwardly entails something quite ridiculous, namely, that the total amount of justification in a system of beliefs cannot increase due to inference. I trust that no one (skeptics aside) interprets it that way, which is why they don't immediately reject it as absurd.

Inferential instrumentalism seems plausible because it is implicitly interpreted charitably as a form of inferential creationism, what we can call, *minimal inferential creationism*: inference can increase the total amount of justification in a system of beliefs.

More fully spelled out, minimal inferential creationism says that the following can happen: (i) begin with a set of beliefs, $B_1 \dots B_n$, such that, (a) their respective levels of justification $J_1 + \dots + J_n = J_m$, and (b), none is inferentially based on any of the others; (ii) then inferentially base one member of the set on one or more of the other members; (iii) in virtue of that inferential basing, the sum of $B_1 \dots B_n$'s respective levels of justification *increases*—that is, now $J_1 + \dots + J_n > J_m$.

Here is my second argument encapsulated:

Creative Instrument

1. If the most plausible version of inferential instrumentalism is true, then inferential creationism is true. (Premise)
2. The most plausible version of inferential instrumentalism is true. (Premise)
3. So inferential creationism is true. (From 1 and 2)

²⁶ I hesitate to mention it, but there is another option: my belief that P is automatically re-justified by justification from somewhere else. I can't bring myself to even take this seriously.

²⁷ Notice that it doesn't matter whether the justification for Q is discounted due to aggregated risk over inference. It matters only that Q is *to at least some extent* justified in virtue of the inference.

6.3. *Improvement*

My third argument is based on a story.

Once upon a time, you believed Q based on what is an irredeemably bad reason B. You are doxastically justified in believing B, but B doesn't support Q at all. You were just badly mistaken to make the inference from B to Q. Your belief that Q is not doxastically justified: it is not at all well-founded or properly held. But you also believe something else, G1, which is a good reason to accept Q. So your belief that Q is propositionally justified. And you also believe one other thing, G2, which is a good reason to accept G1; so your belief in G1 is propositionally justified too. And you also believe one other thing, G3, which is a good reason to accept G2; so your belief in G2 is also propositionally justified. And this pattern continues indefinitely, such that: (i) for any arbitrarily high n , you believe G_n ; (ii) G_n is a good reason to believe G_{n-1} ; (iii) G_{n+1} is a good reason to believe G_n ; but (iv) you haven't yet utilized the chain. You never noticed the connections and so haven't accepted any G_n based on G_{n+1} . But you are thoroughly disposed to do so, should the question ever arise.

Then someone asks you why you think Q is true. You reflect for a moment and it strikes you that your reason for accepting Q is bad. Rather than hastily give up the belief, you ask yourself, "Do I have a good reason to accept Q?" And then it occurs to you, "G1 is true, and if it's true, then so is Q. So Q is true." Your belief in Q is now inferentially based on G1 instead of B. And you lived happily ever after. *The end.*

Here is a crucial question: is your belief in Q more properly held or better founded at the end of this story than it was at the beginning? Did you improve the way your belief is held? It seems obvious to me that you did. Your belief that Q is now more properly held, better founded than it was before, *in virtue of being based on what is in fact a good reason for holding it*, namely G1. And this remains true even though G1 is not yet based on a good reason for holding it—that is, G1 is not yet based on G2. Your belief in G1 is more poorly founded than your belief in Q, which is based on it. So the story shows that at least weak inferential creationism is true.

The story also arguably shows that strong inferential creationism is true. Suppose that having some measure of doxastic justification requires being based on a good reason.²⁸ G1 isn't based on G2 by the end of the story. So G1 lacks any measure of doxastic justification at the end of the story. But your belief in Q gained some measure of doxastic justification in virtue of being based on G1. So if the supposition is true, then strong inferential creationism is true.

²⁸ I actually doubt that this is true (see Turri 2010b). But most epistemologists accept it, so I present it for consideration. In any event, we might be able to reach the same conclusion by stipulating that in the story your belief in G1 doesn't have any other property sufficient to doxastically justify it to some extent. But that's a rather bold stipulation.

Let me encapsulate the argument based on the story:

Improvement

1. If your belief is better founded at the end of the story, then inferential creationism is true.
2. Your belief is better founded at the end of the story.
3. So inferential creationism is true.

7. Odds and Ends

In this final section I introduce some examples where normative properties are created. None of these immediately leads to further arguments in favor of creationism. But they're worth having in view, since they might help us better understand the strengths and weaknesses of creationism, and perhaps also infinitism, by comparison.

Promising and moral duty. Most promises aren't obligatory. That is, typically when you make a promise, in no sense were you morally obliged to promise. But typically when you make a promise, you're now obliged to do what you promised. Something that isn't obligatory at all (a promise) can create obligations (to do what is promised). Strong promissory creationism about moral duty is true.

Procreation and moral duty. Procreation isn't obligatory. Typically when people procreate, in no sense are they morally obliged to procreate. But typically when you procreate, you do incur moral obligations to care for your progeny. Something that isn't obligatory at all (procreation) can create obligations (to care for your progeny). Strong procreation creationism (procreationism!) about moral duty is true.

Promising and moral justification. Some promises shouldn't be made. But typically once they are made, even unjustified promises generate an obligation to do what is promised. When you follow through on an unjustified promise, your action is, at least to some extent, morally justified by the fact that it's based on a promise. (Note: it might still be all-things-considered wrong to fulfill the promise.) Something that isn't morally justified (the promise) can create moral justification (for doing what is promised). Strong promissory creationism about moral justification is true.

Context and aesthetic value. Suppose you're a playwright. Inspiration strikes! You have a fantastic idea for a final scene. You write it down. But it lacks prior context. Prior context would make it a better scene. Inspiration strikes again! You have a fantastic idea for a penultimate scene. You write it down. The final scene now has some prior context, which improves it. But the penultimate scene doesn't have any prior context, at least not yet. Prior context would make it better. Something that lacks prior context and the aesthetic value that it brings (the penultimate scene) can give something else prior context and the aesthetic value it brings (the final scene). Working backwards, each previous scene you add to the play could in turn better contextualize and thereby improve all of the subsequent scenes, despite itself lacking prior context or the value it brings. Strong creationism about aesthetic value is true.

Promising to infinity. Suppose that you have no reason at all to perform a certain action, say, to buy the mayor a gift as a token of appreciation for her public service. Then you promise someone, S1, that you will buy the gift. Now you have some reason to buy the gift. Then you promise S2 that you will fulfill your promise to S1. Now you have some more reason to buy the gift. Then you promise S3 that you will fulfill your promise to S2. Now you have yet more reason to buy the gift. The longer this goes on, the more reason you have to buy the gift. And the longer it goes on, the better justified your buying the gift will be. Of course, all things considered you might still have more reason to *not* buy the gift, no matter how many promises hang in the balance. Promising doesn't settle matters once and for all. This is structurally similar to the way infinitists have thought about doxastic justification.

8. Conclusion

Conventional wisdom is that inference can't create justification. But as has happened so often before, conventional wisdom is wrong. I accomplished two main things in this paper. On the one hand, I mounted a vigorous defense of inferential creationism by responding to existing objections and presenting three positive arguments on its behalf. On the other, I explained why the truth of inferential creationism doesn't advantage infinitism. Still, infinitists can take comfort in the fact that one popular objection to their view has been effectively neutralized.

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