

# Human knowledge and the infinite progress of reasoning

Peter Klein

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**Abstract** The purpose of this paper is to explain how infinitism—the view that reasons are endless and non-repeating—solves the epistemic regress problem and to defend that solution against some objections. The first step is to explain what the epistemic regress problem is and, equally important, what it is not. Second, I will discuss the foundationalist and coherentist responses to the regress problem and offer some reasons for thinking that neither response can solve the problem, no matter how they are tweaked. Then, I want to present the infinitist solution to the problem and defend it against some of the well known objections to it.

## Some preliminary comments about the epistemic regress problem

Many contemporary epistemologists take the epistemic regress problem as *a*, if not *the* central problem, in epistemology. BonJour, for example, says of considerations surrounding the regress problem that they are “perhaps the most crucial in the entire theory of knowledge.”<sup>1</sup> Audi points to its central role “in motivating both foundationalism and coherentism.”<sup>2</sup> Finally, as is typical with foundationalists, William Alston employs it as the primary motivation for his view.<sup>3</sup>

<sup>1</sup> Laurence BonJour (1985, p.18).

<sup>2</sup> Robert Audi (1993, p. 10).

<sup>3</sup> William Alston, (1989, p. 55).

P. Klein (✉)

Philosophy Department, Rutgers University, 26 Nichol Ave, New Brunswick, NJ 08901, USA  
e-mail: pdklein@rci.rutgers.edu

Although the authors just mentioned recognize that infinitism is one possible response to the regress problem, they all dismiss that alternative without any careful arguments. For example, BonJour says “though it is difficult to state in a really airtight fashion, this argument [that humans have a finite mental capacity] seems to me an adequate reason for rejecting [infinitism].”<sup>4</sup> We will take up the “finite mind” objection later. My point here is merely that the regress problem is acknowledged to be central to epistemology, but one possible solution has not been given the careful consideration that I think is warranted.

The long history of the regress problem underscores its significance. Aristotle discusses it in both the *Posterior Analytics* and the *Metaphysics*.<sup>5</sup> In the former he begins by asserting that if some knowledge is the result of demonstration, then some knowledge must not be the result of demonstration. For either the series of demonstrations terminates or it doesn’t. If it doesn’t, then we could not know anything because “one cannot traverse an infinite series” (*Post. An.* 72b10), presumably because each step in the “traversing” takes some time.<sup>6</sup> On the other hand, if the series does terminate, the conclusion of the demonstration is not “properly” known “but rests on the mere supposition that the premisses are true.” (72b14) He also considers a third possibility, namely that the series of propositions is circular and argues that in giving a demonstration, the premisses must be “prior to and better known than the conclusion” and “the same things cannot be simultaneously both

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<sup>4</sup> BonJour (1985, p. 24).

<sup>5</sup> All citations from Aristotle are from Richard McKeon (1941).

<sup>6</sup> I am here attributing to Aristotle in this passage the view that what causally brings about our knowledge is the inferring of a conclusion from a premise and that the process of inferring cannot be infinitely long. I do think that is a plausible way to read these passages, especially in light of what he says at 72a30, namely “So since the primary premisses are the cause of our knowledge—i.e., of our conviction—it follows that we know them better—that is, are more convinced of them—than their consequences, precisely because our knowledge of the latter is the effect of our knowledge of the premisses.” It seems plausible to suppose that he is here concerned about the manner which beliefs, what he calls “convictions,” are formed. But it has been pointed out to me by Anne Ashbaugh that in other places in the *Posterior Analytics* he gives what appears to be an entirely different reason for thinking that demonstrations cannot be infinitely long having to do with his particular account of demonstration that requires a middle term to connect the subject and predicate in a syllogism. He argues that there cannot be infinitely many such middle terms. (See 82a21).

The issue here, I think, is why Aristotle believes that there cannot be infinitely many middle terms. If the reason is that if there were infinitely many middle terms, demonstration would be impossible because demonstration involves inferring which takes some time, then these passages would be consistent with the interpretation I am imposing. On the other hand, it does seem that in Chapters 19–22 he takes the reason to be related to his account of definition and the role that definitions play in demonstrations. Further, there does seem to me to be a significant difference in the translations at crucial points between the McKeon one and the one found in Barnes (1995). Compare the Barnes’ translation of 72a30 with the McKeon one give above. Barnes writes “Hence if we know and are convinced because of the primitives, we both know and are convinced of them better, since it is because of them that we know and are convinced of what is posterior.” The causal reading of this passage that I was giving to the McKeon version is much less plausible.

In any event, I think the more contemporary view separates the finite mind objection from the no-starting point objection. I hope that it will become clear that the former has to do with our supposed inability to make a belief doxastically justified. Bluntly put, a belief could never be doxastically justified if that requires performing an infinite number of inferences. The latter has to do with the way in which propositional justification arises. Again, bluntly put, it cannot be the case that all propositional justification arises through transferring it from one proposition to another.

prior and posterior to one another, so circular demonstration is not possible.”(72b25–28)<sup>7</sup> His proposed solution to the epistemic regress problem is foundationalism. As he says, his “own doctrine is that not all knowledge is demonstrative; on the contrary, knowledge of the immediate premisses is independent of demonstration.” (72b18)

In the *Metaphysics*, while discussing some forms of skepticism, he presents another basis for rejecting infinitism:

There are ... some who raise a difficulty by asking, who is to be the judge of the healthy man, and in general who is likely to judge rightly on each class of questions. But such inquiries are like puzzling over the question whether we are now asleep or awake. And all such questions have the same meaning. These people demand that a reason shall be given for everything; for they seek a starting point, and they seek to get this by demonstration, while it is obvious from their actions that they have no such conviction. But their mistake is what we have stated it to be; they seek a reason for things for which no reason can be given; for the starting point of demonstration is not demonstration. (1011a2–14)

Sextus Empiricus puts the no starting point objection to infinitism even more starkly. He says:

... [the] regress *ad infinitum* is that whereby we assert that the thing adduced as a proof of the matter proposed needs a further proof, and this again another, and so on *ad infinitum*, so that the consequence is suspension [of assent], as we possess no starting-point for our argument.”<sup>8</sup>

So, there are two basic reasons for rejecting infinitism: (i) we have finite minds and (ii) the regress of reasons has no starting point. Given that circular reasoning is unacceptable, I think we can envision an *apparently* sound *reductio* argument whose conclusion is that there is some knowledge that is basic, i.e., some of our beliefs rise to the level of knowledge even though we do not or, perhaps, cannot have reasons for those beliefs.

That argument which seems to make foundationalism inevitable can be put in the form of a *reductio*, like this:

1. All knowledge is the result of reasoning from premisses to conclusions. (Assumption for *reductio*)
2. Either the series of premisses terminates in a first premise or it doesn't.
3. If there is no first premise, no knowledge would be possible. (The “no starting point” and “finite minds” objections to infinitism)
4. If there is a first premise either it has appeared in the series earlier or it hasn't.

<sup>7</sup> Aristotle does think that there is a “qualified sense” in which a proposition might both be prior and posterior to itself, but if I understand him correctly, it is a sense that is not relevant for our purposes. As I understand it, he thinks that a proposition might be “prior for us” in the sense that we might learn it first but not “prior in an unqualified sense”—the sense in which something is epistemically prior in demonstrations based upon first principles or what he calls “immediate premisses” (72b18). His example is induction. I think he means that we might come to know that Socrates is a man and Socrates is mortal before coming to know that all men are mortal, but in giving a demonstration of *Socrates is mortal*, the proper way to begin is with *all men are mortal*.

<sup>8</sup> Sextus Empiricus, *Outlines of Pyrrhonism*, I, 166–167.

5. If it has appeared earlier, then a proposition is being employed in its own evidential ancestry and circular reasoning has occurred and such reasoning cannot produce knowledge.
6. If it has not appeared earlier, it is merely assumed to be true and such mere assumptions cannot yield knowledge.
7. So, if all knowledge were the result of reasoning there would be no knowledge.
8. There is knowledge.
9. So, not all knowledge is the result of reasoning. (From 1–8 via *reductio*)

Case closed. Or so it seems.

Some skeptics could deny 8. But foundationalism would still remain the correct normative account of knowledge because even if 8 were false, we can still conclude that if there is knowledge, then there must be some foundational knowledge—some knowledge that is not the result of reasoning. I will argue that even the hypothetical is false. That is, I deny that if there is knowledge, at least of the sort that we value most highly, it does not follow that there is some knowledge which is foundational. Indeed, I will argue that it cannot be foundational.

My claim is that the *kind* of knowledge that we value most highly requires that there is a series of reasons for our cognitions that is endless and non-repeating. That is, there is a type of knowledge such that premise 1 holds with regard to that type. The *reductio* regarding that type of knowledge fails because premise 3 is false with regard to that type of knowledge. There are no first, terminal premisses, but such knowledge is still possible.

In other places I have referred to that kind of knowledge as “real knowledge” or “distinctive adult human knowledge.”<sup>9</sup> It is “real” knowledge in the same sense that one says of the paradigm case of a race horse: “Now, that’s a *real* race horse.” That is, “real knowledge” is the highest form of knowledge. Sosa refers to it as “reflective knowledge” and Lehrer refers to it as knowledge involving “acceptances” rather than mere beliefs.<sup>10</sup> I think it is akin to the traditional concept of *scientia*. It is knowledge that results from carefully examining our beliefs in order to determine which, if any, deserve to be maintained. I hope the type of knowledge I have in mind will become clearer as the paper moves along, but a few preliminary comments contrasting this type of knowledge with that type which passes the all-too-common muster might prove useful.

I (seem to) know many things for which I can’t now give good reasons either because I have forgotten what the reasons are that originally led me to my beliefs or because it is some bit of knowledge that was not ever based upon reasoning.<sup>11</sup> I grant that there is such knowledge. That is, I grant that there is a very good, clear sense in which we have basic knowledge. In that sense, I know that there was once a queen named “Anne,” that Shakespeare wrote many plays, and that here’s a hand (thought while looking at my hand). None of that knowledge was (or, at least, need be)

<sup>9</sup> See my 1983 and 1999.

<sup>10</sup> See Ernest Sosa (1997) and Keith Lehrer (2000), especially pp. 12–14.

<sup>11</sup> I put “seem to” in parentheses because I do want to leave open the possibility that skepticism is the correct view. But from now on I will drop that qualification simply for ease of presentation. The reader can add it whenever I make claims about the nature and/or scope of knowledge.

*produced or sustained* by reasoning.<sup>12</sup> I had certain experiences that caused me to believe all of those things and in the circumstances in which those beliefs arose, I came to know them. As any good reliabilist would say, I am good detector of hands if I use a reliable *sort* of process in the right *sort* of environment. There will be the generality problem to face in characterizing what *sort* of process is reliable and in what *sort* of environment it is reliable—but so be it. That’s not my problem to solve.

In the right sort of environment, dogs, small children and security devices are good detectors of hands. They can even discriminate between the hands of one person and the hands of another. Lehrer’s Mr. Truetemp knows the temperature in his environment just as chicken sexers are good detectors of the sex of young chickens.<sup>13</sup> In the gypsy fortune teller cases, the fact that neither we nor the fortune tellers know *how* they are able to predict the future provides no evidence that they do not know the future.<sup>14</sup> In general, I see no reason to deny that such detectors have some sort of knowledge. And we—humans—are detectors.

But in so granting that there is knowledge of this sort that either did not arise from reasoning or is not now sustained by reasoning, I am not granting that there is no sort of knowledge which does not require that there is an endless, non-repeating series of reasons. What should be obvious is that the detector type of knowledge is not what is distinctive of adult humans—or at least those of us who seek to be *epistemically responsible* agents who have examined our beliefs and aim at holding only those which *after* that examination are worthy of belief. From this perspective, unexamined beliefs are not yet worthy of believing. We seek to have good reasons for our beliefs. As Sosa puts it:

Admittedly, there is a sense in which even a supermarket door “knows” when someone approaches, and in which a heating system “knows” when the temperature in a room rises above a certain setting. Such is “servo-mechanic” knowledge. And there is an immense variety of animal knowledge, instinctive or learned, which facilitates survival and flourishing in an astonishingly rich diversity of modes and environments. Human knowledge is on a higher plane of sophistication, however, precisely because of its enhanced coherence and comprehensiveness and its capacity to satisfy self-reflective curiosity. Pure reliabilism is questionable as an adequate epistemology for such knowledge.<sup>15</sup>

My claim is that this type of knowledge does not arise from reasoning that begins with foundational propositions, i.e., propositions which either do not have or cannot have further reasons which support them. I will use “knowledge<sub>c</sub>” or “know<sub>c</sub>” to indicate the relevant type of knowledge. “Knowledge” will continue to be used as a more inclusive term that refers to knowledge<sub>c</sub> as well as what we might think of as mere rudimentary knowledge—the kind had by dogs, children, gypsy fortune tellers, Mr. Truetemp, and most of us on most occasions.

A key notion here is, of course, ‘epistemic responsibility.’ It is an unabashed normative notion. And that is as it should be since the regress problem is about what kind of reasoning can satisfy the norms of epistemic responsibility. A full account of

<sup>12</sup> For example, see Moore’s (1959) discussion of his knowledge about such things as “here’s a hand.” He argues that he knows such things but he could not “tell you what all my evidence is.”(p. 149)

<sup>13</sup> Lehrer (2000, p. 187).

<sup>14</sup> Peter Unger (1968), especially 163–164.

<sup>15</sup> Ernest Sosa (1991). p. 95.

epistemic responsibility is beyond the scope of this paper, but I take it that epistemically responsible agents examine their beliefs in order to determine which, if any, are worthy of being kept. My claim is that only the infinitist has a concept of reasoning that can satisfy that goal.

No doxastic voluntarism is entailed by this claim because it could be that we just can't adjust our beliefs so that all and only those that we take to be worthy of believing are, in fact, believed. A responsible epistemic agent *strives* to believe all and only those propositions worthy of belief. Success is not necessary.

The regress problem is not an intellectual puzzle. It is a *practical problem* for responsible epistemic agents, namely: Which arrangement of reasons provides a good model for locating propositions that are worthy of belief?

### Propositional and doxastic justification<sup>16</sup>

When we say that a belief is justified, we can mean two quite different things because “belief” can refer to (1) the propositional content of a belief state or (2) it can refer to the belief state itself. Thus, when we say that a given belief, say the belief that *p*, is justified we can mean either that (1) the proposition, *p*, is justified or (2) the belief state having *p* as its content is justified.

As the expression “propositional justification” implies, such justification is an epistemic property of propositions rather than a property of belief states. We can say that a proposition, *h*, is *propositionally justified for S* just in case there is an *epistemically adequate basis* for *h* that is available to S regardless of whether S believes that *h*, or whether S is aware that there is such a basis, or whether if S believes that *h*, then S believes *h* on that basis. I will return to what constitutes an adequate epistemic basis shortly. Watson, unlike Holmes, failed to believe many propositions that were justified for him because he was oblivious to the available evidence.

Beliefs, i.e., belief states, are the bearers of doxastic justification. A belief that *h* is *doxastically justified for S* when and only when S is acting in an epistemically responsible manner in believing that *h*. I take it that doxastic justification, and not mere propositional justification, is the necessary condition of knowledge<sub>c</sub> in the “traditional” JTB set of necessary (but not sufficient) conditions for knowledge<sub>c</sub>. More simply, S's belief that *h* must be doxastically justified in order for S to know<sub>c</sub> *h*. Thus, even if S holds a true belief whose content is propositionally justified and there is no genuine defeater of the propositional justification, it would not follow that S has knowledge<sub>c</sub>. S's beliefs must be formed so that they are doxastically justified. For example, at least in some cases, the belief must be held for the “right” reasons. What makes a proposition justified? And what makes a belief justified?

It will be useful to discuss, very briefly, the three different answers to those questions given by foundationalists, coherentists and infinitists.

### The three concepts of propositional justification

*Foundationalists* come in many stripes; but what unifies them is a picture of propositional justification. There are some propositions, call them “basic propositions,”

<sup>16</sup> As far as I know, this distinction was first introduced by Roderick Firth (1978).

that are justified, at least to some extent, but not in virtue of another proposition. Indeed, it is a feature of basic propositions that they have what we can call “autonomous justification.” Like unmoved movers, they are unjustified justifiers.

Those expressions can be misleading. They are not meant to imply either that the unmoved mover isn’t moving or that the unjustified justifier isn’t justified. The unmoved mover moves other objects but is not moved by another object. The unjustified justifier justifies other propositions but is not justified by another proposition, or, more cautiously, at least some of its justification is not inherited from another proposition.<sup>17</sup> Justification arises—*somehow!*—in some basic propositions and it is transmitted by inference to other propositions which would not be justified otherwise. I am deliberately emphasizing what strikes me as the mysterious nature of autonomous propositional justification as envisioned by the foundationalists.<sup>18</sup>

Foundationalists think (as we all do) that justified beliefs are more likely to be true in virtue of being justified. That is, justification is taken to be truth conducive—but in most cases, not truth guaranteeing. Inheriting justification, and, hence the likelihood of being true, through legitimate inferences is *prima facie* understandable. If *A* is justified and more basic than *B* and the inference from *A* to *B* is legitimate, then *B* is justified. Indeed, from a foundationalist point of view legitimate inferences are just those that transmit truth either fully or partially from more basic to less basic propositions. But why should we think that autonomous justification is truth conducive? That’s the mystery to which we will return and, as I hope to show, it is the very property of being autonomously justified—if there were such a thing—that prevents self-conscious foundationalists from being able to practice what they preach while at the same time being epistemically responsible.

In addition to this difficulty to be discussed in some detail later, there are two general, related problems with this foundationalist account of justification that deserve mentioning here—if only to relax the grip that foundationalism has on our view of propositional justification. *First*, many inferences are not completely truth preserving so the further along the inference path a proposition is from the basic one, the less likely it is to be true unless enough deductive inferences are intermingled or coherence (or some other epistemic property) is thrown in to restore the amount of propositional justification lost by non-deductive inferences. Some *ad hocery* seems in the offing. *Second*, as Quine and others have argued, a form of skepticism seems to be the inevitable result of foundationalism since there appear to be no good inference paths from the foundational claims to those propositions normally taken to be within our ken. Bluntly put, foundationalism seems to lend some credence to Academic, Cartesian, or Humean Skepticism.<sup>19</sup>

Nevertheless, the foundationalist’s picture of justification is the dominant one and we will have to consider it more seriously in due course. If it cannot provide the basis

<sup>17</sup> The analogy between justification and motion would fail if there were just one unmoved mover because foundationalists need not be committed to the view that there is just one basic proposition or that the degree of justification possessed by a basic proposition cannot be enhanced by its relationships to other propositions. More simply put, the degree of justification for an autonomously justified proposition could be augmented if reasons for it could be given. But it would still possess some degree of autonomous justification.

<sup>18</sup> This observation is not original with me. See Laurence Bonjour (1993), especially 218.

<sup>19</sup> I have argued that those skeptical positions are not necessitated by the traditional foundationalist conception of justification. See my 2002, 2004a, b, and “Skepticism,” *Stanford Encyclopedia of Philosophy*.

for solving the epistemic regress problem, the primary reason for its dominance will have been eliminated.

*Coherentism* comes in two varieties. A transference form and an emergent form.<sup>20</sup> The transference form, which probably was never held by anyone, pictures justification as being a property of one proposition that can be transferred to another and then to another, etc., and eventually back again. Think of basketball players standing in a circle passing the ball round and round.

It is important to note that this view is parasitic on the foundationalist account of propositional justification. For once again, somehow justification arises in the circle of propositions and is transferred via inference from one proposition to another. Thus, it is not surprising that Aristotle employed the foundationalist concept of a fixed epistemic priority among propositions in developing his criticism of this transference form of coherentism mentioned earlier. To exploit the analogy a bit: Transferring the basketball seems easy to understand, but how the basketball got there in the first place is mysterious.

The second form of coherentism—the emergent form—is a radical departure from foundationalism because it does not think of propositional justification as a property attached to a proposition that can be transferred to another one. Rather, it views justification as an emergent property such that when sets of propositions have a certain arrangement—a coherent structure—all members of the set of propositions are justified. *Sets* of propositions are the primary bearers of justification and individual propositions are justified only in virtue of being a member of the set.<sup>21</sup>

The *infinetist* conception of propositional justification is a similar radical departure from foundationalism in that it conceives of justification of a proposition, *p*, as emerging when the set of reasons for *p* is non-repeating and endless. That is, infinitism does not envision justification as a property of a proposition that can be transferred to another proposition. Rather, it views propositional justification for *p* as emerging when and only when there is an endless set of non-repeating propositions beginning with *p* such that each succeeding proposition provides an adequate epistemic basis for the previous one. Thus, it bears some similarity to the emergent coherentist view because a proposition is justified in virtue of being a member of a set of propositions of a given sort. It differs from emergent coherentism in that it retains a notion of epistemic priority. In that sense, it does bear some similarity to foundationalism; but as we will see shortly, infinitism does not require that epistemic priority be a *fixed* relation between propositions.

### The three concepts of doxastic justification

Doxastic justification is parasitic on propositional justification. We have said that a belief that *p* is doxastically justified for *S* iff *S* is acting in an epistemically responsible way in believing that *p*. For a self-conscious epistemic agent—an agent who practices what she preaches—what constitutes a responsibly held epistemic belief will depend upon what that agent thinks is required for a proposition to be justified for her.

<sup>20</sup> Once again, I am indebted to others for drawing this distinction. See, for example, Laurence Bonjour, (1985), and Ernest Sosa, “The Raft and the Pyramid,” 1980.

<sup>21</sup> Bonjour calls this form of coherentism “holistic coherentism” and defends it in 1985.



A *foundationalist* would seek a belief whose propositional content, say  $p$ , is either (i) a basic proposition or (ii) if  $p$  is not basic, then  $S$  would seek to provide some path of reasons for  $p$  which terminates in basic propositions. Typically, foundationalists will go even further and require that the belief that  $p$  ( $Bp$ ) have some sort of appropriate causal pedigree. In other words, they will require that  $Bp$  be causally based upon other beliefs and those on others ... with the first belief in the series being a belief with a basic proposition as its content. That basic belief, in turn, is usually taken to be caused by either another type of mental state, for example, a perception or a memory (if one is a representational realist) or some non-mental state, for example, a material object (if one is a direct realist).

But this causal requirement seems to me to place foundationalism in a very precarious position since it just might turn out that beliefs don't have the required type of causal history. Suppose that as our understanding of mental contents advances, we find that the actual causes of beliefs don't follow the path of reason(s) which foundationalists think is required. Would foundationalists want that to invalidate their theory? I doubt it. Their commitment is to a view about what makes a belief doxastically justified, that is, what is required for an epistemic agent to be acting responsibly. Thus, what strikes me as crucial to their view is that we are doxastically justified in believing a proposition *iff* either it is basic or we can provide reasons of the right sort. And, for the foundationalist, the right sort ends up with basic beliefs. As Hume would put it, if we can't trace a putative idea back to an impression, we should recognize that it isn't a genuine idea.

*Transference-type coherentists* would take  $Bp$  to be doxastically justified just in case we can arrange our beliefs in a circle. Of course, that's why the view has never been held. If I am wondering whether I have good reasons for believing that  $p$ , and I give a set of reasons for  $p$  that includes  $p$ , I think we would all say that I was not acting in an epistemically responsible manner.

But we have to be careful here not to throw the baby out with the bath water. It certainly can be the case that on some occasion I am acting in an epistemically responsible way if I give as my reasons for thinking that Jones owns a Ford reasons which include *Jones owns an automobile*. And on other occasions I can give *Jones owns a Ford* as my reason for thinking that Jones owns an automobile. What I cannot do is argue in a circle on one and the same occasion. Which proposition is "epistemically prior" depends upon what is the issue at hand. To generalize, there are some pairs of propositions such that I can offer  $x$  as a reason for  $y$  when  $y$  is being questioned and I can offer  $y$  as a reason for  $x$  when  $x$  is being questioned.

Foundationalists can't be that flexible. For example, if they take a proposition like *I am seeing redly* as basic, then it would violate their conception of propositional justification and, consequently, doxastic justification were I to give *there is a red material object before me* as my reason for thinking it true that I am seeing redly. As Aristotle held, there is a fixed order of epistemic priority among propositions required by foundationalism. This strikes me as a significant problem for foundationalism in addition to the two previously mentioned. For it does seem that on some occasions I can easily entertain the question "Am I seeing redly?" and I can use *there is a red material object before me* as one of my reasons for thinking that, yes, it is redly that I am seeing as opposed to, say, greenly. But I won't pursue that difficulty any further here except to say that the infinitist conception of propositional, and hence doxastic justification, allows that reasoning need not trace this fixed path. There can be rigid forms of infinitism, but it is not an essential feature of the view.

BonJour describes what an *emergent coherentist* would take to be the way in which a belief is doxastically justified.<sup>22</sup> Essentially what such a self-conscious coherentist will do is provide reasons for believing that a given proposition is a member of a set of coherent *beliefs*. Note, it is not a good objection to this form of coherentism to point out that any given proposition, say *p*, and its negation are members of equally coherent sets of propositions. The issue here concerns what S's beliefs are. In other words, not just any old set of coherent propositions containing one that S believes suffices for S's belief to be doxastically justified. A belief of mine is doxastically justified for me only if it coheres with my other beliefs.<sup>23</sup>

The *infinetist* will take the belief that *p* to be doxastically justified for S just in case S has engaged in providing “enough” reasons along an endless path of reasons. S would be completely doxastically justified if every reason in the path were provided. But assuming it takes some time to provide reasons, even though a *proposition* might be completely justified (if there is a suitable path of reasons), no *belief* could ever be completely doxastically justified. Nothing is ever completely settled, but as S engages in the process of providing reasons for her beliefs they become better justified—not because S is getting closer to completing the task, but rather because S has provided more reasons for her belief. How far forward in providing reasons S need go seems to me to be a matter of the pragmatic features of the epistemic context—just as which beliefs are being questioned or which can be taken as reasons is contextually determined.

It is not surprising that in many contexts we can legitimately stop giving reasons when we have reached what would satisfy the inquirers—at least for the moment. At one point in our history (i.e., in the mid 20<sup>th</sup> century when Wittgenstein was writing what was to be published as *On Certainty*) *I have never been on the moon* was taken as a bedrock proposition, but one could have easily imagined a situation in which the rules of the “game” changed and some reasons for that proposition would be required. And as mentioned before, suppose that we are typically satisfied if we reason forward to a sense-data/appearing proposition, e.g., *I am seeing redly*. It is not always a proper ending because the issue could be, for example, whether I am remembering correctly what seeing redly is like. Perhaps, someone might suggest, that I am mistaking seeing redly for seeing greenly. Such doubts are rarely raised, but they are sometimes appropriate. Once again, to paraphrase, that my name is P.K. is typically bedrock for me—but one can easily imagine situations in which the giving of reasons for that belief is appropriate. Thus, I think one explanation of what has misled the foundationalist is that she has taken what is *almost* always a legitimate stopping point in providing reasons to always be a legitimate stopping point.

This difference between infinitism and the other two forms of doxastic justification underscores an inherent, non-dogmatic tendency in infinitism. For the infinitist grants that she has not finished the process of justifying her beliefs. There is always a further step that can be taken should we become dissatisfied with the point at which we stopped the progress of inquiry. That looks to me like a piece of cake rather than a bullet.

<sup>22</sup> See Bonjour (1985) and Lehrer (2000).

<sup>23</sup> That condition seems too strong because on some occasions it seems we should retain beliefs that do not cohere with other beliefs, e.g., negative experimental results when testing a previously highly confirmed theory. But that's not my problem. It is up to the emergent coherentist to explain which incoherent beliefs are worthy of being retained.

But let me hasten to point out that the infinitist view of doxastic justification does not entail a form of iterative skepticism. We have said that if S knows<sub>c</sub> that *p*, then S is doxastically justified in believing that *p* and it might seem that S could never know<sub>c</sub> that S knows<sub>c</sub> that *p* because S could never know<sub>c</sub> that there is an endless path of non-repeating reasons for *p*. But in order to know<sub>c</sub> that there is such a path all that is required, *ceteris paribus*, is that there is a path and that S be doxastically justified in believing that there is such a path.<sup>24</sup> Nothing in principle prevents S from being so doxastically justified and hence from knowing<sub>c</sub> that there is such a path unless, of course, there is no such path. If there were no such path, then not only would iterative skepticism be true, direct skepticism would be true because S could not know<sub>c</sub> that *p*.

### Further clarification and defense of infinitism

Infinitism is committed to an account of *propositional justification* such that a proposition, *p*, is justified for S *iff* there is an endless series of non-repeating propositions available to S such that beginning with *p*, each succeeding member is a reason for the immediately preceding one. It is committed to an account of *doxastic justification* such that a belief is doxastically justified for S *iff* S has engaged in tracing the reasons in virtue of which the proposition *p* is justified far forward enough to satisfy the contextually determined requirements.

While being committed to the two claims just presented, infinitism is uncommitted about the answers to three questions:

- (i) Are the beliefs which are cited as reasons the causes of other beliefs?

Something causes S to believe that *p*, and something causes S to believe the proposition, say *r*, that is S's reason for *p*, etc. And it could be that beliefs with the reasons as their content are the causes. Further, it could be that if one traces the causal chain back to the first mental state in the chain, one discovers that the first mental state is not a belief. It could be a perception or memory. In other words, I am willing to grant a kind of naturalistic foundationalism with regard to the causes of beliefs, namely, that there are some beliefs that are not caused by other beliefs. But even if the causes of beliefs are finite, it does not follow that the reasons for our beliefs are finite.

This is not a trivial matter because I think there is a deep confusion at the heart of much foundationalist epistemology, perhaps beginning with Aristotle's arguments in the *Posterior Analytics*. As I have interpreted some passages, he argues that if some knowledge is the result of demonstration, some knowledge is not the result of demonstration. I think "result" here must mean "causal" result if the reason he gives for this claim is compelling; namely, that since inferring takes some time and that we "cannot traverse an infinite series," (since we live for only a finite time) it follows that if there is some knowledge that *causally* results from inference, there must be some knowledge that does not *causally* result from inference.<sup>25</sup> But it does not follow that if we have knowledge<sub>c</sub> that causally results from inference, then there

<sup>24</sup> The *ceteris paribus* qualification is designed to finesse the Gettier Problem.

<sup>25</sup> Please refer to footnote 6.

is some known<sub>c</sub> proposition for which there is no further reason available or that epistemic responsibility does not, on some occasions, require locating such a reason. In other words, the causal chain might have a beginning, but it does not follow that locating reasons for our beliefs has a stopping point. That is true even if one takes a located reason to be a sustaining cause. For it could be that if no further reason is located for the initial belief, i.e. the belief requiring a reason that initiates the search for reasons, and if *S* is a responsible epistemic agent, the initial belief might (i) disappear or (ii) be modified in content or (iii) be modified in degree of credence.

(ii) What makes one proposition a reason for another?

Every full account of propositional justification will require delineating the conditions under which one proposition can serve as a reason for another. Although foundationalists hold that there are basic propositions which are justified by something other than a proposition, they will also have to provide an account of what makes one proposition a good reason for another—since they will have to give an account of non-basic knowledge. I think it is obvious that both forms of coherentism will have to provide such an account. Infitinists also will have to provide an account of what makes one proposition a reason for another.

There are many accounts available. For example, *p* is a reason for *q* iff:

1. if *p* is probable, then *q* is probable and if *p* is not probable, then *q* is not probable; or
2. in the long run, *p* would be accepted as a reason for *q* by the appropriate epistemic community; or
3. *p* would be offered as a reason for *q* by an epistemically virtuous individual; or
4. believing that *q* on the basis of *p* is in accord with one's most basic epistemic commitments; or
5. if *p* were true, *q* would be true, and if *p* were not true, *q* would not be true.

This list is not meant to be exhaustive. The point is that (1) what makes *p* a reason for *q* is an issue that must be addressed by all accounts of propositional justification and (2) infinitism can opt for whatever turns out to be the best account since each of them is compatible with what infinitism is committed to.

(iii) What makes a proposition available to *S*?

A key notion employed in the infinitist's account of propositional justification is that an endless series of non-repeating propositions must be *available to S*. As mentioned earlier, that requirement might seem to lead to skepticism, since it might seem impossible for it to be satisfied. After all, we have "finite minds." But even such minds can have dispositions such that were they to consider a proposition—which might or might not have been previously considered—they would come to believe the proposition.

This is an important point because it helps to clarify the notion of knowledge<sub>c</sub> that lies at the heart of the infinitist's requirement for doxastic justification, namely that we be able to produce reasons for our beliefs. The issue is not what causes our beliefs; but rather whether we can cite a reason for our beliefs.

Suppose that I believe that Helena is the capital of Montana. Of course, I might have just read that. Or a reliable person may have just told me that. In those cases, the reason is readily available. It takes no effort on my part to locate the reason. But suppose that, at least at the moment, I can't come up with my reasons. Nevertheless, there could be a reliable process that was causally responsible for the belief and, as granted at the outset, in some perfectly good sense of "know," I do know that Helena is the capital of Montana. But I don't know<sub>c</sub> that Helena is the capital of Montana unless there are some reasons for that belief available to me.

How readily available must they be? Must they be armchair available, such that on mere careful reflection, *ceteris paribus*, S will produce them? In other words, must a proposition be entailed or otherwise implied by the content of S's current beliefs in order for that proposition to be available? That is a pretty stringent requirement and, although one could imagine such hard-to-please infinitists, infinitism is not committed to that. Infinitism could hold that a proposition, *p*, is available to S just in case there is an epistemically credible way of S's coming to believe that *p* given S's current epistemic practices.<sup>26</sup> Available propositions to S are like money in S's bank account that is available to S if S has some legal way of withdrawing it even if S is unaware that the money is there or takes no steps to withdraw it.

For example, suppose S's epistemic practices are such that S would check the state capital listings in the *World Almanac* were it required in order to satisfy the contextually determined parameters. Suppose further that such an authoritative source lists Helena as the state capital of Montana. This liberal view of availability would count the proposition *the Almanac is a reliable source and it lists Helena as the state capital* as available to S. Perhaps the armchair requirement is appropriate for *a priori* knowledge<sub>c</sub> and the liberal view is required for a posteriori knowledge<sub>c</sub>. The crucial point here is that nothing seems to prevent a finite mind from having an endless set of propositions available.

So, I think we can safely set aside the finite mind objection. We don't have to traverse infinitely many steps on the endless path. There just must be such a path and we have to traverse as many as contextually required.

### **Infinitism is the only alternative that can solve the regress problem**

I hope by now that it is clear how infinitism, as opposed to foundationalism and coherentism, would characterize propositional and doxastic justification. It is now time to present my argument for the claim that infinitism is the only view on offer that can solve the regress problem.

We have already seen that there are three solutions (foundationalism, coherentism or infinitism) on offer. The remaining steps in the argument are to show that neither (1) foundationalism nor (2) coherentism supplies its practitioners with a way to solve the regress problem and, thus, infinitism is the only remaining possible solution on offer. After presenting that argument, I will take up the old canard that infinitism proposes a process of justification that has no "starting point."

<sup>26</sup> Further, it seems plausible to suggest that S might even develop new concepts when seeking reasons. But a discussion of that would take us too far afield.

(1) Foundationalism cannot provide its practitioners with a way to solve the regress problem.<sup>27</sup> To see that, recall that the problem is to find a way to be epistemically responsible in believing a proposition. Now, imagine a dialog (even if it is a *sotto voce* one). Call the personae, Fred the Foundationalist and Sally the Skeptic. Fred begins by asserting something, say *p*, and Sally asks Fred why he believes that *p*. Fred gives his reason, say *r*. This goes on for a while, but eventually Fred gives what he takes to be a basic reason, say *b*. Sally asks Fred for his reason for *b*. Fred, being a foundationalist, says that there is no reason available for *b*—or more cautiously—there need be no reason available for *b* because *b* is propositionally justified at least to some degree but not in virtue of there being a reason for it. So, he continues, in order to be a responsible epistemic agent, he need not provide a reason. Up to this point reasons could be asked for and a responsible agent would seek them. But, he says that things are different once we get to the basic one.

Hopefully the sometimes muted inner voice of epistemic responsibility would speak up and say to Fred. “Fred, this is mysterious. It looks arbitrary. Why do you think it is permissible to stop at *b*, when you kept tracing reasons back many, many steps?” Sally could have said the same thing—but she’s too polite. Fred does get the point, though. It would be mysterious to stop at *b* unless, of course, Fred thinks that *b* has some property, call it *F*, in virtue of which *b* is propositionally justified but not by some other proposition.<sup>28</sup> Fred thinks for a bit and claims that *b* does have such a property. In fact, Fred could appeal to a number of such properties. For example, *F* could be the property of being a first-person sensation report; or *F* could be the property of being clear and distinct; or *F* could be the property of being a bedrock proposition in Fred’s language game. Pick your favorite property, *F*, that marks off basic propositions from non-basic ones.

Sally (or Fred’s inner voice) can grant that *b* has *F*. But she now asks Fred to consider this question: Are propositions with *F* likely to be true? Fred has only three responses available if he is to remain acting as a responsible epistemic agent seeking to retain only those beliefs worthy of being retained. He could, of course, get bored or see what’s coming and flee—reminiscent of some of the characters in a Platonic dialogue. The context is such that if Fred is interested in holding doxastically justified beliefs, these are his possible responses:<sup>29</sup>

1. Propositions with *F* are not likely to be true.
2. It’s just as likely that propositions with *F* are true as it is that they are not true.
3. Propositions with *F* are likely to be true.

<sup>27</sup> The argument here is in many ways similar to the one presented by BonJour (1985).

<sup>28</sup> Recall that the foundationalist thinks that propositional justification arises in some propositions through transmission but in some others without the aid of other propositions. The infinitist and the coherentist don’t hold this view—but we are here giving the foundationalist his due.

<sup>29</sup> Alternately, there is another threefold set of responses that Fred could give which has the same consequence as the one attributed to him in the text: 1.\* I deny that propositions with *F* are likely to be true. 2.\* I withhold that propositions with *F* are likely to be true. 3.\* I believe that propositions with *F* are likely to be true. I think there is no essential difference between these responses and the ones employed in the main text because, for the reasons mentioned in the main text, only 3\* will satisfy the conditions of epistemically responsible believing, and 3\* coupled with the claim that I believe that *b* has *F*, provides the basis for my believing that *b* is true.

If he takes either option 1 or 2, he should recognize that  $b$  is not a suitable foundation on which to rest his entire world view. He thought  $p$  was true because  $r$  was true. And, shortcutting things a bit, he thinks  $r$  is true because  $b$  is true. And he thinks he is entitled to stop seeking reasons for  $b$  because  $b$  has F. But if he thought that F is either such that it is not likely that  $b$  is true or that it is equally likely that  $b$  is false as it is that  $b$  is true, then he should see that he isn't believing  $b$  in an epistemically responsible way. It might be basic and it might be basic because it has F. But now he should see that unless possessing F makes it likely that  $b$  is true, continuing to believe that  $b$  and using  $b$  as a basis for all of his other beliefs is the height of epistemic irresponsibility.

Thus, in order to be epistemically responsible in holding  $b$  and every proposition depending upon  $b$ , Fred's only choice is to hold that propositions with F are likely to be true. But, then the regress has continued because Fred has located a very good reason for thinking that  $b$  is true, namely,  *$b$  has F and propositions with F are likely to be true*. Hence, although foundationalism might be the correct account of propositional justification, it cannot provide a basis for Fred to solve the regress problem—the problem of making beliefs doxastically justified. To solve that problem he has to jettison foundationalism.

As mentioned earlier, the primary argument that has been given for foundationalism is that it can solve the regress problem; but we have just seen that if Fred is to be an epistemically responsible in holding his beliefs, he will have to provide a reason for thinking that  $b$  is true. In other words, he can't be an epistemically responsible agent and practice what he preaches.

To underscore that point, suppose Fred is a “Wednesday foundationalist.” He thinks that any belief that he acquires on Wednesday is basic. So, once he arrives at some belief, say that the number of stars is even, which was acquired on Wednesday, he stops giving reasons and explains to Sally (or to his rather incredulous inner voice) that *the number of stars is even* is a basic proposition and no reason is needed. Sally would ask Fred whether he thinks that such Wednesday propositions are more likely to be true than not, and Fred *has* to give the only answer available to an epistemically responsible agent. He has to say, “Yes, Wednesday's beliefs, as opposed to, say, Thursday's beliefs, are likely to be true.” Silly, right?

I cite this example, merely to underscore the point that no one would hold such a foundationalist view because no one would think that Wednesday propositions are likely to be true in virtue of being Wednesday propositions. To the contrary, all the plausible foundationalist accounts of propositional justification delineate F-properties that are meant to be truth conducive. They, like us, want to be responsible epistemic agents! Foundationalists pick F-properties that are truth conducive and, thereby, implicitly provide a reason for their thinking that the so-called basic propositions are true. In short, any plausible version of so-called foundationalism will provide its proponents with a reason for thinking that basic propositions are true.

(2) Coherentism can not provide its practitioners with a way to solve the regress problem. I take it that no one would defend the transmission account because it explicitly endorses circular reasoning. What constitutes circular reasoning is not at all easy to specify, but I will assume that one desideratum of such an account is that it explain why circular reasoning cannot deliver doxastically justified beliefs.

On the other hand, and as others have pointed out, the emergent form of coherentism is nothing but one-step foundationalism.<sup>30</sup> All propositions in the

<sup>30</sup> See Sosa (1980).

coherent set are justified for S because they are members of a coherent set of propositions which are the contents of S's beliefs. The F-property in this case is simply being a member of such a set of coherent propositions. As such, the trilemma facing foundationalism can be redeployed here: Is it likely that sets of coherent propositions contain true members? You can see how that will go.

So, only infinitism is left as a possible solution on offer to the regress problem. It should be clear, I think that the self-conscious infinitist will gladly defend the claim that propositions with F are likely to be true. She will just skip the claim that such propositions are basic! Such so-called basic propositions might typically provide a reason for which no other reason is needed, given the contextual requirements, but when pressed, a responsible epistemic agent will seek a reason for thinking that they are true.

### One last objection to infinitism

But is infinitism really a good solution? Maybe, it too, fails.

We have already considered one of the most common objections, namely the finite mind objection and explained how our minds can have an endless set of propositions available and how a belief can be doxastically justified to a required level even though it is never completely justified. I would like now to conclude by considering the so-called “no starting point” objection mentioned earlier.<sup>31</sup> The objection is this: It cannot be the case that all propositional justification is transmitted from one proposition to another. Just as with real property in which there must have been some original ownership established before the property can be transmitted, there must be some way for a proposition to be justified that does not require transference.

The answer to this objection is ready-to-hand. It is obvious, I think, that the objection presupposes a foundationalist picture of propositional justification. Foundationalists think of propositional justification as a property possessed autonomously by some propositions which, by inference, can then be transmitted to another proposition—just as real property can be transmitted from one owner to another once its initial ownership is established. But, of course, the infinitist, like the emergent coherentist, does not paint this picture of propositional justification. As we have seen, the infinitist conceives of propositional justification for a proposition as emerging whenever there is an endless, non-repeating set of propositions available as reasons. No starting point is required because propositional justification is not a property that can be transmitted from one proposition to another.

Now, does the actual practice of justifying a belief come to an end? Of course. We get tired. We have to eat. We have satisfied the inquirers. We die. But even though it does end, if there were no next reason available to us should the circumstances of the inquiry require it, then the proposition that we originally began with is not justified and our original belief would lose the doxastic justification it had acquired through the process of providing reasons.

<sup>31</sup> There is one other relatively common objection, namely, the *reductio* objection that every proposition would be justified for S, because there is an endless series of propositions that can be constructed for every proposition. I have attempted to answer that objection and some others in my 2003, 2004a, b, and 2005a, b.



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## References

- Alston, R. (1989). *Epistemic Justification*. Ithaca: Cornell University Press.
- Audi, R. (1993). *The Structure of Justification*. New York: Cambridge University Press.
- Barnes, J. (1995). *The complete works of Aristotle*. Princeton: Princeton University.
- BonJour, L. (1985). *The structure of empirical knowledge*. Cambridge: Harvard University Press.
- BonJour, L. (1993). A critique of foundationalism. In: L Pojman, (Ed.), *The theory of knowledge* (pp. 214–226). Belmont, California: Wadsworth.
- Firth R. (1978). Are epistemic concepts reducible to ethical concepts? In: A. Goldman, & J. Kim, (Eds.), *Values and morals*. Dordrecht, Holland: D. Reidel.
- Klein, P. (1983). Real knowledge. *Synthese*, 55(2), 143–164.
- Klein, P. (1999). Human knowledge and the infinite regress of reasons. *Philosophical Perspectives*, 13, J. Tomberlin (Ed.): 297–325.
- Klein, P. Skepticism, *Stanford Encyclopedia of Philosophy*.
- Klein, P. (2002). Skepticism. In P. Moser (Ed.), *The Oxford Handbook of Epistemology* (pp. 336–336). Oxford: Oxford University Press.
- Klein, P. (2003). When infinite regresses are *not* vicious. *Philosophy and Phenomenological Research*, 66(3), 718–729.
- Klein, P. (2004a). There is no good reason to be an academic skeptic. In S. Luper (Ed.), *Essential knowledge* (pp. 299–309). Longman Publishers.
- Klein, P. (2004b). What is wrong with foundationalism is that it cannot solve the epistemic regress problem. *Philosophy and Phenomenological Research*, 68.1, 166–171.
- Klein, P. (2005a). Infitinism is the only solution to the epistemic regress problem. M. Steup (Ed.), *Contemporary debates in philosophy* (pp. 131–140). Oxford: Blackwell.
- Klein, P. (2005b). Response to Ginet, M. Steup (Ed.), *Contemporary debates in philosophy* (pp. 149–152). Oxford: Blackwell.
- Lehrer K. (2000). *Theory of knowledge* (2nd ed.). Boulder, Colorado: Westview Press.
- McKeon, R. (Ed.) (1941). *The basic works of Aristotle*. New York: Random House.
- Moore G. E. (1959). Proof of the external world. *Philosophical papers*. London and New York: The Macmillian Co.
- Sextus Empiricus, *Outlines of Pyrrhonism*, I, 166–167.
- Sosa, E. (1980). The raft and the pyramid. *Midwest Studies in Philosophy*, 5, 3–25.
- Sosa, E. (1991). *Knowledge in perspective*. Cambridge: Cambridge University Press.
- Sosa, E. (1997). Reflective knowledge in the best circles. *Journal of Philosophy*, XCIV, 410–430.
- Unger, P. (1968). An analysis of factual knowledge. *Journal of Philosophy*, 65.6, 157–170.