

INFERENCEAL, COHERENTIAL, AND FOUNDATIONAL WARRANT: AN ECLECTIC ACCOUNT OF THE SOURCES OF WARRANT

Mark J. BOONE

ABSTRACT: A warranted belief may derive *inferential warrant* from warranted beliefs which support it. It may possess what I call *coherential warrant* in virtue of being consistent with, or lacking improbability relative to, a large system of warranted beliefs. Finally, it may have *foundational warrant*, which does not derive from other beliefs at all. I define and distinguish these sources of warrant and explain why all three must be included in the true and complete account of the structure of knowledge, and why the first two sources are significant at all levels of knowledge. Only foundherentism and a weak version of foundationalism can satisfy this criterion. My analysis has significant, and happy, consequences for the epistemological tradition. The project of describing the structure of knowledge is nearly complete. Those who have pronounced the death of epistemology are partially correct, not because epistemology has failed, but because it has been so successful.

KEYWORDS: foundationalism, coherentism, foundherentism, warrant, externalism, internalism

The purposes of this article are to give a thorough and eclectic account of the sources of warrant, to articulate a criterion for the true and complete account of the structure of knowledge, and to apply that criterion to some major accounts of the structure of knowledge. The significance of my analysis, if it is correct, is that one major project of analytic epistemology has almost completely succeeded and that as a result a major chapter in the history of epistemology is all but closed.

In recent decades epistemologists have produced an astounding quantity of research investigating the structure of knowledge and analyzing the sources of warrant.¹ I shall not attempt to summarize this vast literature. But, within their

¹ Many of these epistemologists will use the term ‘justification’ instead of ‘warrant.’ The externalist tradition in epistemology does *not* identify warrant and justification. Alvin Plantinga, for example, defines warrant as that “quality or quantity enough of which, together with truth and belief, is sufficient for knowledge.” (Alvin Plantinga, *Warrant and Proper Function* (New York: Oxford University Press, 1993), v) Justification, in his view, is warrant that comes in the form of evidence or some other form of rational support for a belief. Thus, justification is a *type* of warrant; all justification is warrant, but not vice versa. Similarly, Tyler Burge refers to what he calls ‘entitlement’ as a variety of ‘warrant’ which does not involve

salutary conversation, it is possible to discern three different sorts of warrant they have said a belief may have. Moreover, they are *correct* about all three. First, there is *inferential warrant*: warrant a belief derives from a small number of other beliefs which support it. Second, there is what I shall call *coherential warrant*: warrant a belief possesses in virtue of its consistency with a large system of warranted beliefs. Finally, there is *foundational warrant*, warrant which a belief does not derive from other beliefs at all – neither from small sets of other beliefs nor from its consistency with a larger system of beliefs. Foundational warrant does not come *from* a system of beliefs at all; it is that basic sort of warrant which goes *into* a system of beliefs.²

In what follows I shall define and distinguish these three sources of warrant with references to some of the major epistemologists who have touted their importance (Sections I-III). Then I shall explain why all three sources of warrant would be included in the true and complete account of the structure of knowledge (Section IV). Then I shall explain why this account must be a form of either *weak foundationalism* or *foundherentism* (Section V). I will conclude (Section VI) by explaining the significance of my analysis for the past work of epistemologists, and explaining what remains to complete the epistemological project of describing the structure of knowledge.

If my analysis is correct, it has significant, and happy, consequences for the recent epistemological tradition. The project of describing the structure of knowledge, one of the major goals of analytic epistemology, is more or less complete. Accordingly, those who have declared the death of traditional epistemology are to that extent correct. Yet they are not correct for the usually cited reason, that epistemology has failed; they are correct for the happier reason that it has *succeeded*, at least in its goal of describing the structure of knowledge.

rational understanding; he refers to another variety of warrant as ‘justification,’ meaning by this term much the same as Plantinga does (Tyler Burge, “Perceptual Entitlement,” *Philosophy and Phenomenological Research* 67, 3 (2003): 504-5). Obviously “warrant” is the more inclusive term, and so I shall adopt their terminology.

² The language of different varieties of warrant may be misleading. I am not performing a metaphysical analysis of what inferential, coherential, and foundational warrant fundamentally *are*, but an epistemological analysis of three ways a belief may have warrant – three relationships a warranted belief may bear to the overall structure of knowledge. A *metaphysical* analysis might find that a belief can have warrant in three different ways because there are three fundamentally different types of warrant-stuff; or it might find that there are only two; or only one.

I. Inferential Warrant

In this section I shall define the type of warrant I am calling *inferential* warrant, explain its importance to two traditions in epistemology, and explain its role in a system of warranted beliefs.

Inferential warrant is warrant that is passed to a belief from a small number of other beliefs.³ It is ‘inferential’ because the warrant transfer can be formulated in terms of an argument, although it does not have to be. For example, I believe that France once had a King Louis the XVI, and I believe that the titles of monarchs are numbered sequentially starting from one; so I believe that France once had a King Louis the VI (although at present I can remember nothing about him). My belief that France had a King Louis the VI is warranted because the beliefs on which I base it are warranted. Inferential warrant can be transferred to one belief from others for the very simple reason that some beliefs either *entail* others (in the way the premises of a valid argument do their conclusion), or merely *support* others (in the way the premises of a strong argument do their conclusion). Accordingly, when the supporting beliefs are warranted, at least some of that warrant is transferred to the belief they support.

Adherents to all of the major views on the structure of knowledge emphasize the importance of inferential warrant. For example, *foundationalism*, roughly, is the view that knowledge needs a foundation, and the impetus behind foundationalism is the notion that inferential warrant must have an origin in some foundational beliefs that are *not* inferentially warranted. But every belief that is *not* part of the foundation *is* warranted inferentially. Again, *coherentism*, roughly, is the view that inferential warrant does *not* begin with such foundational beliefs, but is passed from belief to belief (and perhaps also to each belief from the set of all beliefs), without ever really *beginning* anywhere. Accordingly, for both foundationalism and coherentism, inferential warrant is an important source of warrant for our beliefs.

Knowledge involves a system, an arrangement, of our beliefs that maximizes their warrant and thereby increases the probability that most of the things we believe are true. In the structure of warranted belief, inferential warrant is the most visible sort of warrant, for most (perhaps all) of our warranted beliefs are supported by other warranted beliefs. Inferential warrant is passed to each belief that has it from a set of warranted statements that provide a degree of support for it – a set not including the belief itself. The set of supporting statements may have

³ This sort of terminology is nothing new, of course; Laurence Bonjour, for example, refers to ‘inferential justification’ in “Can Empirical Knowledge Have a Foundation?” *American Philosophical Quarterly* 15, 1 (1978): 2.

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one member, just as an argument may have only one premise; or it may have many members, just as an argument may have many premises. There may be more than one set that provides a belief with inferential warrant, just as a statement may be supported by more than one argument. However, in order to have inferential warrant, a belief need only receive warrant from *one* set of beliefs which support it – a set corresponding to a potential argument to which the belief in question would be the conclusion.

II. Coherential Warrant

I use the term ‘coherential warrant’ to designate a variety of warrant which is distinct from inferential warrant and which also happens to be important in a coherentist theory of the structure of knowledge. I am *not* using the term to designate what coherentists generally refer to as ‘coherence,’ which may rather be a combination of inferential and coherential warrant, or even a description of the shape inferential warrant takes in the overall structure of knowledge.

In this section I shall define ‘coherential warrant’ and explain its role in a system of warranted beliefs; then I shall explain its relationship to inferential warrant; finally, I shall explain why an appeal to coherential warrant has been a key component of coherentist theories of the structure of knowledge.

A. What Coherential Warrant Is

Coherential warrant is the type of warrant a belief possesses in virtue of its consistency with a large system of warranted beliefs, or in virtue of its *lack of improbability* relative to a large system of warranted beliefs. If most of the beliefs in a large network of beliefs are true, a belief consistent with most or all of them is likelier to be true than one *not* consistent with most or all of them; all else being equal, it is more warranted. Moreover, a statement which is *not* improbable given a large set of warranted beliefs is likelier to be true than one that *is* improbable given the same set of warranted beliefs. Accordingly, coherential warrant for a belief depends on the warrant of the network of beliefs which respect to which that belief is warranted, and on the warrant of the members of that network of beliefs. Coherential warrant comes in degrees, varying in seven ways that I can see. Coherential warrant for a belief is higher when it is not only consistent with but also lacks improbability relative to the system of beliefs with which it coheres, when that system is larger, or when the system of beliefs itself contains a higher degree of warrant. A fourth way coherential warrant may vary in degree is this: When a belief is consistent with, or lacks improbability relative to, *most but not all of* a large system of warranted beliefs, then, although it may have *some*

coherential warrant, it has still *less* than a belief consistent with or lacking improbability relative to the *entire* system. A fifth way is this: The coherential warrant of a belief is increased by its ability to *explain* the body of beliefs, or a subsection thereof, with respect to which it has coherential warrant.

Another important feature of coherential warrant is a sixth way it varies: It is increased by the presence of terms common both to the belief that has it and to the belief system with respect to which that belief is warranted. A statement *P* which is not improbable given a large set of warranted beliefs, some of which concern the same things which *P* concerns, is likelier to be true than a statement *Q* which is not improbable given the same set of warranted beliefs but which does *not* concern any of the same things. For example, the statement “The DOW Jones will top 23,000 points in the next five years” and the statement “The shifting of tectonic plates is causing the Himalayas to grow taller” are equally consistent with my knowledge of economics; but the former derives much more coherential warrant from my economic knowledge than does the latter. Moreover, in a seventh way, coherential warrant for a belief is higher when the state of affairs it describes is similar to some of the states of affairs described in the set of beliefs with respect to which it is warranted.

Coherential warrant is very important, and beliefs generally require it if they are to be responsibly believed. But it is, by itself, a relatively weak sort of warrant, such that it is rarely, if ever, sufficient by itself to make a belief the kind that *should* be believed.⁴ The belief “I will die sometime in the next ten years” has a high degree of coherential warrant, but that does not mean I should believe it to be true; for its negation – “I will *not* die sometime in the next ten years” – also possesses a high degree of coherential warrant.

B. Coherential Warrant’s Relationship to Inferential Warrant

Coherential warrant is not the same thing as inferential warrant, but it is closely related to it. After describing some structural differences, I will explain why the two terms are not coextensive, and then I shall explain why they are nevertheless closely related.

Inferential warrant travels to one belief from a set, usually a very small one, of beliefs which support it. Coherential warrant is structurally different in two

⁴ If it is not yet clear to the reader, I am using the term ‘warrant’ to refer to the stuff that is necessary for true belief to be knowledge, a stuff which comes in degrees and a certain amount of which is necessary for knowledge. In this sense a belief could have some warrant, but not enough to be knowledge. (An alternative use of ‘warrant’ would denote the quantity of this stuff which is enough, excluding Gettier cases, for true belief to be knowledge.)

important ways. First, it involves a very *large* set of beliefs, a global system or network of beliefs. Second, a belief does not possess coherential warrant in virtue of being *supported* by those beliefs; they may or may not support it; what provides coherential warrant is merely the belief's *consistency* with them, or its lack of improbability relative to them. A belief with inferential warrant receives from the beliefs which support it a *positive* support; it is, at least to the degree it has inferential warrant, *good* (epistemically speaking) to hold that belief. A belief with *coherential* warrant receives a weaker form of support from the beliefs with respect to which it has coherential warrant, such that it is simply *not bad* (epistemically speaking) to hold it. Of course, it is possible, and desirable, for a belief with coherential warrant to also have inferential warrant. Beyond mere consistency with or lack of improbability given a large set of beliefs, a belief may also be *supported* by them, or a subset of them. For example, my belief that "Some real things exist independently of my perceptions of them" is highly probable given the various warranted beliefs I have about the things in the world, such as the beliefs that "There are crocodiles in the Nile River," "Julius Caesar crossed the Rubicon," and "Tolkien wrote *The Hobbit*." In this case, a belief possesses *inferential* warrant from an unusually large set of warranted beliefs; but it also possesses *coherential* warrant because it lacks improbability given that same set of beliefs (and, in fact, a larger set including that set plus whatever other warranted beliefs are consistent with it). The belief is all the better warranted for having *both* varieties of warrant relative to a large set of warranted beliefs. Indeed, we rarely think of coherential warrant without thinking of inferential warrant.⁵

Most beliefs with good inferential support also possess a high degree of coherential warrant with one's overall system of belief, and commonly vice versa. But not always! A belief can have coherential warrant without having inferential warrant. The belief "I will die sometime in the next ten years" has a high degree of coherential warrant, although the set of beliefs with which it coheres does not provide inferential support for it. Furthermore, a belief may have inferential warrant without having coherential warrant. A new scientific theory may possess little or no coherential warrant with respect to other scientific theories, but may possess a high degree of inferential warrant with respect to whatever evidence inspired the theory.

⁵ In his earlier writings defending coherentism, for example, Laurence Bonjour refers to a *combination* of what I am calling inferential and coherential warrant by the name 'coherence.' Laurence Bonjour, *The Structure of Empirical Knowledge* (Cambridge, MA: Harvard University Press, 1985), chapter 5.

Although they are not the same, coherential warrant is closely related to inferential warrant. The belief “I will live to the age of one hundred and fifty” does not have coherential warrant because it is improbable given quite a few of my warranted beliefs. To the contrary, the statement “I will *not* live to the age of one hundred and fifty” is inferentially warranted by the same beliefs on which the statement “I will live to the age of one hundred and fifty” is improbable. This suggests a new definition of coherential warrant: A belief has coherential warrant with respect to a set of warranted statements if and only if its negation does *not* have *inferential* warrant from the same set, or a subset of it. So, while coherential warrant is not the same as inferential warrant, it can be explained in terms of inferential warrant.

C. Coherential Warrant and Coherentism

Coherentism has emphasized this sort of warrant. Coherentism alleges that there are no beliefs from which inferential warrant, which is passed to one belief from other beliefs, begins. This opens up coherentism to the charge that it views warrant as a very complicated exercise in vicious circularity. Since our finite minds are only capable of holding to a finite number of beliefs at one time, we do not have an infinite number of beliefs; accordingly, on coherentism it is necessary that inferential warrant must loop back on itself. So the objection goes.

A coherentist can reply that not all warrant comes from the support of warranted beliefs. Inferential warrant is transferred among beliefs in this way, but not coherential warrant. Transferred warrant is warrant by support, but a belief has coherential warrant in virtue of its consistency with the overall arrangement of beliefs, *not* by being positively *supported* by them. So some warrant that *is* transferred comes from *non*-transferred warrant. So knowledge is not merely a complicated exercise in vicious circularity. Thus Laurence BonJour, in his classic articulation of coherentism, *The Structure of Empirical Knowledge* (1985), speaks of a belief’s place within a holistic system of warranted belief.⁶ He explicitly links the property some beliefs have of being part of a holistic system of warranted beliefs to his claim that the transferring of warrant to one belief from others does not reach back into infinity.⁷ Moreover, it would seem that for any belief, it may have direct inferential support from some of the beliefs in the system; yet its overall warrant is increased by its being part of the system of belief. The difference between its direct inferential warrant and its overall warrant is what I am calling its coherential warrant.

⁶ BonJour, *The Structure*.

⁷ BonJour, *The Structure*, 91.

So the response to the objection goes, and in this way coherential warrant is an important part of the structure of knowledge for the coherentist. I myself do not think this response is ultimately successful, as I shall explain later.

The notion of a holistic system of belief is important, by the way, and brings out one of the major insights of coherentism: That we may speak not only of a *system of warranted beliefs*, but also of a *warranted system of beliefs*. A system of belief can be warranted in three ways that I can see: by being composed of warranted beliefs; by being composed of beliefs that provide mutual inferential warrant among themselves; and by being largely composed of consistent beliefs, at least some of which are warranted. This third way is the most interesting with respect to coherential warrant and, it seems to me, is a special case of coherential warrant: the warrant a large set of beliefs possesses in virtue of its being largely composed of mutually consistent beliefs, at least some of which are warranted. For a large set of beliefs which is consistent with a smaller subset of warranted beliefs is more likely to be true than one that is not thus consistent.⁸

III. Foundational Warrant

In this section I shall define the type of warrant I am calling *foundational*, discuss its importance in internalist and externalist epistemologies, and explain its role in a system of warranted beliefs.

Foundational warrant is essentially un-transferred warrant, warrant which is not derived from the warrant of other beliefs – warrant that does not depend on the warrant of other beliefs at all. Descartes found it in the belief “I exist,” a belief warranted no matter what other beliefs there are (or, in his case, are *not*) in a system of beliefs. Foundational warrant can begin the process of warrant transfer. It is *foundational* because it has no basis in a system of beliefs, and in fact *is* a basis for the warrant in a system of beliefs. This is the sort of warrant to which foundationalists call our attention. According to foundationalism, there are such things as *basic beliefs*, or beliefs warranted without reference to other beliefs, and with reference to which other beliefs may be warranted.⁹

Inferential and coherential warrant are functions of the relationship of a belief to other beliefs. Not so foundational warrant, which is a function of the

⁸ Much of BonJour’s discussion of what he calls ‘coherence’ in *The Structure of Empirical Knowledge* concerns the warrant of belief systems, not individual beliefs. BonJour, *The Structure*, chapter 5.

⁹ For example, Plantinga says: “some of one’s beliefs may be *based upon* others; . . . Some of my beliefs, however, I accept but don’t accept on the basis of any other beliefs. Call these beliefs *basic*.” (Alvin Plantinga, “Is Belief in God Properly Basic?” *Noûs* 15, 1 (1981): 41)

relationship of a belief to the truth, or, we might say, to the realities about which our beliefs are. What exactly this relationship is and how it is brought about are topics well beyond the scope of my project; to answer these questions would no doubt require a long foray into various issues metaphysical and epistemological, including the mind-body problem. However, for a rough approximation, we can say that a belief has a degree of foundational warrant when it is likely to be true at least partly as a result of certain right reasons – namely, those right reasons which are independent of that belief's connection to other beliefs.

Foundationalists have generally given two different sorts of accounts of what these reasons are. The internalist foundationalist tradition argues for the importance of foundational warrant to which a knower has mental access, warrant which is available to him to inspect, so that in cases of real knowledge *he can see for himself* that he has knowledge.¹⁰ The externalist foundationalist tradition argues for the importance of foundational warrant to which a knower does *not* have access; the warrant for such a belief is *not* open for a knower to inspect; he cannot see it for himself. Thus Chisholm, representing internalist foundationalism, argues that access to the conditions for warrant is necessary if knowledge is to be any different from mere true belief,¹¹ which practically every epistemologist since Plato has recognized as a requirement for knowledge.¹² On the other hand, Alvin Plantinga, representing externalist foundationalism, argues that warrant is the quality of beliefs produced by reliable epistemic faculties aimed at the production of true belief and functioning properly in their proper environment, the environment in which they are designed to function;¹³ it is the activity of such properly functioning faculties which distinguishes knowledge from mere true belief, and thus knowledge does not require mental access to the conditions for warrant. Similarly, Tyler Burge says that a person's perceptual beliefs can have a variety of warrant he calls 'entitlement' even when the person does not understand the warrant for the belief.¹⁴ Another externalist foundationalist is Fred Dretske, who also uses the word 'entitlement' to refer to beliefs that are

¹⁰ Roderick Chisholm's definition of internalism: "The internalist assumes that, merely by reflecting upon his own conscious state, he can formulate a set of epistemic principles that will enable him to find out, with respect to any possible belief he has, whether he is justified in having that belief." (Roderick Chisholm, "The Indispensability of Internal Justification," *Synthese* 74, 3 (1988): 285-6)

¹¹ Chisholm, "The Indispensability," 285-296.

¹² Plato, *Meno*, 97a-98d.

¹³ Plantinga, *Warrant and Proper Function*, 46-47.

¹⁴ Tyler Burge, "Content Preservation," *Philosophical Review* 103 (1993): 457-88; Burge, "Perceptual Entitlement," 503-48.

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‘unjustified justifiers;’ Dretske treats foundationalism as necessarily externalist, evidently disagreeing with Chisholm on the possibility of mentally accessible foundational warrant.¹⁵ So the internalist foundationalist thinks beliefs which have foundational warrant have this sort of warrant because I can see for myself that they are true, without having to look at my other beliefs. The externalist foundationalist thinks my beliefs with foundational warrant have it for some other reason independent of my other beliefs – in Plantinga’s case, because they are produced by the faculties that give us knowledge.

Despite this interesting and important disagreement, internalist and externalist foundationalists agree on the necessary presence of foundational warrant in the structure of knowledge. In the system of beliefs, foundational warrant is basic; it does not come *from* a system of beliefs at all. It goes *into* it. Foundational warrant is a source for the other varieties of warrant.

IV. Why All Three Types of Warrant Matter

There are, then, three ways a belief might have warrant – three ways it might be related to the overall structure of knowledge. A belief has *inferential* warrant when it bears to other, warranted beliefs the relationship of being supported by them. A belief has *coherential* warrant when it bears to a wide body of warranted beliefs the relationship of consistency, or does *not* bear the relationship of *improbability*. And a belief has *foundational* warrant when it has warrant independently of these other relationships to the structure of knowledge.

Each of the three varieties of warrant I have described would feature in the true and complete account of the structure of knowledge. In this section I shall explain why this is so, beginning with coherential warrant; in the next section I shall describe the two general forms such an account of knowledge might have.

A. The Importance of Coherential Warrant

The importance of *Coherential* warrant must be acknowledged in the true and complete account of the structure of knowledge for all types of belief, *including at least some of our beliefs with foundational warrant*. Consider two beliefs that both have some amount of foundational warrant, using examples inspired by Plantinga’s view of warrant. Say some of my usually reliable epistemic faculties aimed at the production of true belief are functioning reasonably well in the right environment; they produce in me two beliefs: that “There is a woodpecker in the

¹⁵ Fred Dretske, “Entitlements: Epistemic Rights Without Epistemic Duties?” *Philosophy and Phenomenological Research* 60, 3 (2000): 591.

front yard” and that “Three times three is twelve.” I voice my beliefs aloud to my wife. She accepts the first belief and laughs at the second. I know from experience that she usually laughs at me when I say something stupid, so her laughter is evidence against the second belief. My belief that “Three times three is twelve” is less probable, given my knowledge of my wife’s laughing habits, than the belief that “There is a woodpecker in the front yard.” So it has less coherential warrant, and less warrant overall. The lack of coherential warrant inspires me to reconsider my belief and learn that it is false.¹⁶ Since they were produced by usually reliable epistemic faculties aimed at the production of true belief and functioning reasonably well in the right environment, *both* beliefs have a degree of foundational warrant. But it is the presence of coherential warrant for my belief that “There is a woodpecker in the front yard” which gives that belief additional warrant, enough to make the difference between knowledge and mere true belief. Assuming that the belief is true (and that this is not a somehow a Gettier case), the belief is knowledge. My belief that “Three times three is twelve,” however, *lacked* coherential warrant and so did *not* have enough overall warrant. Even a *true* belief with exactly the same amount of foundational warrant would have a lower epistemic status, and could not really be *known*.

Similar cases could no doubt be constructed for beliefs which have a degree of inferential warrant but do not have the same degree of warrant overall because of a difference in coherential warrant. So coherential warrant is an important component of the structure of knowledge.¹⁷

B. The Importance of Inferential Warrant

Inferential warrant must be acknowledged in the true and complete account of the structure of knowledge for all types of belief, *including at least some of our beliefs*

¹⁶ This is based on a true story, by the way.

¹⁷ That Plantinga’s foundationalism is in need of a coherential element if it is to be a true and complete account of the structure of knowledge has been argued by John Zeis in two articles: “Plantinga’s Theory of Warrant,” *American Catholic Philosophical Quarterly* 72, 1 (1998): 23-38, and “A Foundherentist Conception of the Justification of Religious Belief,” *International Journal for Philosophy of Religion* 58 (2005): 133-60. I have suggested a similar development of Plantingian epistemology myself in Mark J. Boone, “Proper Function and the Conditions for Warrant: What Plantinga’s Notion of Warrant Shows about Different Kinds of Knowledge,” *Philosophia Christi* 14, 2 (2012): 373-386. Burge’s understanding of warrant allows for inferential warrant “to supplement an entitlement,” i.e. a belief foundationally warranted, “or to counter a doubt” (Burge, “Perceptual Entitlement,” 529). Similarly, Dretske says “One may actually have a justification for accepting what one is entitled to accept, but the right does not depend on it.” (Dretske, “Entitlements,” 592)

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with foundational warrant. Inferential warrant must be acknowledged in the true and complete account of the structure of knowledge for at least two reasons. First, every, or nearly every, epistemologist acknowledges its importance for some cases of knowledge. Plantinga may appear to be an exception, but this is only because he emphasizes foundational warrant so strongly. He remains a foundationalist, and all foundationalists believe in the importance of inferential warrant for non-basic beliefs.

Second, and more importantly, inferential warrant simply *is* present in the structure of knowledge. There are cases of knowledge that possess it. For example, I know that there are roofs in Tokyo. This is not a *basic* belief for me. (I have never been to Tokyo, I have no epistemic faculties producing the belief by themselves, and the statement “There are roofs in Tokyo” is not obviously true in the way “Two and two make four” or “I exist” is obviously true.) It is not known simply because it is consistent with or not improbable relative to a large system of my beliefs. (Although it does have a degree of coherential warrant, so do many propositions that are *not* warranted enough to be known.) This belief is warranted primarily because it is supported inferentially by other beliefs, in particular the beliefs “Buildings have roofs” and “There are buildings in Tokyo.” (And this latter belief is warranted primarily because it is supported by the beliefs “Tokyo is a city” and “There are buildings in cities,” and so on.) So inferential warrant is an important part of the structure of knowledge.

Moreover, inferential warrant is important even for some beliefs possessing a degree of foundational warrant. Say my usually reliable epistemic faculties aimed at the production of true belief are functioning reasonably well in the right environment and they produce in me the beliefs that “There is a woodpecker in the front yard” and “Three times three is twelve.” Upon considering these beliefs, I remember that woodpeckers are often seen outside at this time of year, that my wife said she saw one yesterday, and that when I was a child I memorized the formula “Three times three is nine.” The beliefs I remember lend inferential support *for* one of my beliefs which possesses a degree of foundational warrant, and *against* the other. In this case, two beliefs with a comparable degree of foundational warrant have different degrees of overall warrant because of inferential warrant. So inferential warrant is important even for some beliefs that have a degree of foundational warrant.

C. The Importance of Foundational Warrant

Foundational warrant must be acknowledged in the true and complete account of the structure of knowledge for at least one very good reason: to avoid skepticism,

or, more precisely, to explain the fact that we have some knowledge of the world. An appeal to coherential warrant cannot distinguish an account of the structure of knowledge which only includes inferential and coherential warrant from a description of the beliefs of a madman. As Bonjour learned, and most admirably informs us,¹⁸ a system of belief must have a foundational source of warrant if we are to have any genuine knowledge of the world. A madman, or a person deceived by Descartes' malicious demon, may have maximal coherential warrant for all of his beliefs, and may even be careful to have a very high degree of inferential warrant for them. But this system of belief does not track reality. Of course, such a person's beliefs are not *true*, but, as far as *knowledge* goes, if *we* only have the same sort of warrant *he* has, then we are no better off! If foundational warrant does not contribute to a system of belief anywhere, then it does not track reality and contains no knowledge of the world. But we do have knowledge of the world. Therefore, foundational warrant must contribute to our knowledge.

To elaborate: In order to have knowledge of the world, we must have connections not merely *among* our beliefs, but also *between* our beliefs *and reality*. What is the actual nature of these connections is outside the scope of my project, but the point is that those connections supply us with the warrant necessary for having knowledge of the world. And that warrant, not depending on the connections among our beliefs, is foundational rather than inferential or coherential.

The necessity of foundational warrant becomes clearer when we consider that the other two varieties of warrant are derivative; a belief with one of these varieties of warrant got that warrant from some other warrant. Inferential warrant is derivative by definition; it comes to a belief from other beliefs. Coherential warrant is not transferred in the same way, but it, too, is derivative, for it depends on the warrant of the system of beliefs with reference to which a belief is warranted. Even the coherential warrant of a holistic *system* of warranted belief is derivative, for it depends on the warrant of at least some of the beliefs in the system. Since inferential and coherential warrant are both derivative, coherential warrant cannot save any pure coherentism from the charge of vicious circularity after all. Foundational warrant is still necessary.

In short, inferential and coherential warrant come from somewhere. Things that come from somewhere must have somewhere to come from, and the only possibility is that they come from foundational warrant. So some foundational warrant is necessary for a belief system to have the other varieties of warrant. Inference and coherence spread warrant around in a system of belief (and perhaps

¹⁸ Laurence Bonjour, "Haack on Justification and Experience," *Synthese* 112, 1 (1997): 13-15.

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it can be said that coherence increases the warrant present in a system of belief). But there must be some raw warrant in the system before it can be spread around or increased.

V. Foundherentism or Weak Foundationalism

So the correct and complete account of the structure of knowledge must recognize the importance of all three types of warrant, and must furthermore acknowledge the importance of inferential and coherential warrant even for at least some beliefs that have a degree of foundational warrant. I shall now describe what sorts of accounts could satisfy this criterion. There are two strategies available for describing how inferential, coherential, and foundational warrant combine to make our true beliefs into knowledge. These are foundherentism and foundationalism, when it is a *weak* foundationalism in a certain sense which I shall describe. Accordingly, the correct and complete account of the structure of knowledge must be a version of one of these.

First I shall discuss foundationalism, giving it a general definition, a specific but simple definition, and then some subtler definitions used by BonJour, Susan Haack, and myself. I shall discuss the different varieties, stronger and weaker, of foundationalism and explain why a weaker version, on both BonJour's and my definitions, can accommodate all three of the varieties of warrant. Next, I shall describe foundherentism and explain why such a view can accommodate all three of the varieties of warrant I have described. Next, I shall show that, since coherentism and stronger versions of foundationalism *cannot* accommodate all three of these varieties of warrant, the true and complete account of the definition of knowledge must be either foundherentism or a weak foundationalism. Finally, I shall explain why a minority view in epistemology, infinitism, does not provide a viable alternative.

A. Foundationalism and the Three Varieties of Warrant

Generally speaking, foundationalism is the view that knowledge must have a foundation. One more specific definition is this basic one: foundationalism is the view that some beliefs which lack inferential warrant can nonetheless be responsibly believed. This is a definition used by some epistemologists, such as Crispin Wright and Jon Altschul.¹⁹ This particular definition of foundationalism

¹⁹ Wright refers to such beliefs as lying "at the foundation of all our cognitive procedures." Altschul refers to "*foundationalism*, the view that there exist warranted beliefs which are not themselves warranted, or justified, by any further beliefs to which one could appeal." See Crispin Wright, "Warrant for Nothing (and Foundations for Free)?" *Aristotelian Society*

would allow us to treat as ‘foundational’ a belief which has coherential warrant, lacks foundational warrant, and does not lend inferential support to other beliefs. This, if I understand rightly, is Wright’s treatment of certain beliefs which he labels *cornerstone propositions* in his famous article “Warrant for Nothing (and Foundations for Free)?” Wright describes cornerstone propositions not in order to explain the structure of knowledge, but to avoid skepticism. Cornerstone propositions are those propositions which we must believe in order to have any knowledge of the world, such as “The world outside my mind exists” and “My senses convey information about the world outside the mind.” In order for me to have entitlement to a cornerstone proposition, it must have coherential warrant for me, for it must be consistent with the rest of my beliefs.²⁰ It need not have any foundational warrant either of the internalist²¹ or externalist variety.²² The major function of these beliefs is not to lend inferential support to other beliefs, but merely to make it possible for them to be warranted.

My own view is that this definition of foundationalism is much too simple, and that this account by itself should not be considered a form of foundationalism. It seems to me that the key concept of foundationalism is not the existence of beliefs warranted without inferential warrant. The key concepts in *foundationalism* are the presence of foundational warrant in some beliefs, and the possibility of those beliefs acting as foundations in the structure of knowledge.

Let us now move on to the subtler definitions of foundationalism, which I take it capture the relevant concepts somewhat better. At least three subtler definitions are possible. Foundationalism is the view that one of these things is the case:

1. Some beliefs have foundational warrant.
2. Some beliefs have foundational warrant and, moreover, the same beliefs do *not* have inferential or coherential warrant.
3. Some such beliefs have *enough* foundational warrant to be *known* without any additional warrant of the inferential or coherential variety.

The first definition is Laurence Bonjour’s and Peter Tramel’s understanding of foundationalism. According to this definition, foundationalism is simply the view that foundational warrant is part of the structure of knowledge; some beliefs

Supplementary Volume 78, 1 (2004): 167–212 and John Altschul, “Epistemic Entitlement,” *Internet Encyclopedia of Philosophy* (2011), <http://www.iep.utm.edu/ep-en/>, Section 3.

²⁰ Wright, “Warrant for Nothing,” 181.

²¹ Wright, “Warrant for Nothing,” 174-5.

²² Wright, “Warrant for Nothing,” 209-10.

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have some degree of warrant that does not derive from other beliefs; inferential and coherential warrant must come *from* somewhere.²³

The second definition is Susan Haack's understanding of foundationalism: that inferential warrant is linear, not circular. On this definition, foundationalism is "the theory that posits basic beliefs justified exclusively by experience as the foundations of all justified belief."²⁴ Foundationalism is a view which *denies* "that justification goes up and back all the way down."²⁵

I favor the third definition of foundationalism: that some beliefs are properly basic in the sense that they can be known even without inferential or coherential warrant. Foundationalism is the view that foundational warrant is sufficient to make the difference between knowledge and mere true belief in some cases. In other words, not only is there such a thing as *warrant* which is not derived from other beliefs; there is also *knowledge* that does not depend on other beliefs; there are properly basic beliefs: beliefs which can lend inferential warrant to other beliefs and can be part of a large system of beliefs from which coherential warrant is derived, but do not themselves require warrant of these types in order to be really *known*.

Foundationalism comes in different varieties. There are questions which different foundationalists might answer differently, such as the question how many basic beliefs there are. But the question that concerns the different varieties of warrant most closely is this: How many beliefs with foundational warrant also have coherential or inferential warrant – all, many, few, or none of them? Generalizing somewhat, the *fewer* of these beliefs a version of foundationalism acknowledges, the *stronger* it is. According to Haack's definition of

²³ BonJour in 1978: "the central thesis of epistemological foundationalism as I shall understand it here, is the claim that certain empirical beliefs possess a degree of epistemic justification or warrant which does not depend, inferentially or otherwise, on the justification of other empirical beliefs, but is instead somehow immediate or intrinsic." (BonJour, "Can Empirical Knowledge Have a Foundation?", 1) Again, BonJour in 1997: "The more or less standard conception of weak foundationalism, after all, is one in which basic beliefs have some relatively weak initial degree of justification, which is then enhanced by something like coherence to a level sufficient for knowledge." (BonJour, "Haack on Justification," 16-17) Tramel argues that Susan Haack's foundherentism is a version of foundationalism because it avoids the problem of warrant regress through an appeal to foundational warrant. So he is using this same definition of 'foundationalism,' that it is a name for any view of the structure of knowledge which includes foundational warrant (Peter Tramel, "Haack's Foundherentism Is a Foundationalism," *Synthese* 160, 2 (2008): 215-228).

²⁴ Susan Haack, "Précis of *Evidence and Inquiry: Towards Reconstruction in Epistemology*," *Synthese* 112, 1 (1997): 10.

²⁵ Haack, "Précis," 8.

foundationalism, all genuine foundationalisms are strong in this sense. But, according to the other two subtle definitions, foundationalism can allow for many, perhaps even *all*, basic beliefs to have some support from other beliefs in the form of inferential or coherential warrant. On Bonjour's definition, foundationalism simply is the view that some beliefs have foundational warrant; they may or may not have the other varieties. On my definition, foundationalism is the view that some beliefs, the properly basic ones, have enough foundational warrant to be knowledge; but, even so, they could possibly receive *additional* warrant of the other varieties; and in any case some beliefs with foundational warrant may *not* have enough warrant to be *known*.²⁶ Accordingly, a foundationalism which is weak in this sense, although it does not require inferential or coherential warrant for *some* beliefs at a foundational level to be *known*, nevertheless can allow for the importance of inferential and coherential warrant at *all* levels, even the basic levels, of knowledge. This is so on my and Bonjour's definitions of foundationalism (but not on Haack's).

In short, since it is a criterion for the correct and complete account of the structure of knowledge that it recognize the importance of all three varieties of warrant, and the presence of inferential and coherential warrant for at least some beliefs possessing a degree of foundational warrant, and since a foundationalism which is weak in the sense I have described can do this, such a foundationalism could be a correct and complete account of knowledge – assuming either Bonjour's or my definition of foundationalism.

B. Foundherentism and the Three Varieties of Warrant

Foundherentism is aptly named by Susan Haack.²⁷ According to this view, both foundationalism and coherentism contain insights, but neither is fully correct, for each lacks the insights of the other. Specifically, foundationalism is correct that the structure of knowledge contains foundational warrant, but coherentism is right that warrant travels in all directions in the structure of knowledge – both from and *to* beliefs with foundational warrant. In her own words, foundherentism:

takes empirical justification to require experiential evidence; but, like coherentism, taking the pervasive interpenetration of our beliefs seriously, and

²⁶ For a closer look at this sort of foundationalism, see my "Proper Function and the Conditions for Warrant."

²⁷ She does not apologize for the neologism, and indeed she should not. Susan Haack, "Double-Aspect Foundherentism: A New Theory of Empirical Justification," *Philosophy and Phenomenological Research* 53, 1 (1993): 113.

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acknowledging that justification goes up and back all the way down, it requires no distinction of basic and derived beliefs.²⁸

One significant difference between Haack's foundherentism and what I am calling weak foundationalism deserves special note. According to Haack, the sort of warrant I am calling foundational does not operate independently of the other varieties of warrant. A belief does not receive some degree of 'initial justification' from foundational warrant, which is then supplemented by coherential and inferential warrant. Foundational warrant only comes into effect when other types of warrant are present. It is not independent from other types of warrant; they and it are *interdependent*.²⁹

Whether Haack's view is really any different from foundationalism, of course, depends on the correct definition of foundationalism. On her preferred definition, her view is *not* foundationalist because beliefs with foundational warrant also have other warrant; warrant is transferred in many directions, not just one. Moreover, on the definition I prefer, her view is *not* a foundationalism because she denies that there are properly basic beliefs, beliefs with *enough* foundational warrant to be *known* without additional warrant of another variety. However, on Bonjour's and Tramel's definition, foundherentism *is* a foundationalism simply because it acknowledges the importance of foundational warrant.

At any rate, a view such as this one can acknowledge the importance of all three types of warrant. Explicitly, it acknowledges the importance of foundational warrant, although it does not operate independently of inferential warrant. Inferential warrant is explicitly important, and that at all levels of knowledge. (I am not aware that Haack emphasizes coherential warrant, but it could easily be integrated into her account of the structure of knowledge.) Since, therefore, it is a requirement of the correct view of the structure of knowledge that it recognize the importance of all three types of warrant, including the importance of inferential and coherential warrant even for beliefs with foundational warrant, and since foundherentism does this, it passes this criterion for being the correct view of the structure of knowledge.

²⁸ Haack, "Précis," 8.

²⁹ Susan Haack, "Reply to Bonjour," *Synthese* 112, 1 (1997): 28-9.

C. The True and Complete Account of the Structure of Knowledge Is a Version of Weak Foundationalism or Foundherentism

All *three* varieties of warrant are important components of the structure of knowledge, even for beliefs that have a degree of foundational warrant. So it is a criterion for the correct and complete account of the structure of knowledge that it recognize the importance of all three varieties, at every level of knowledge. Weak foundationalism, in the sense I have defined, as well as foundherentism, can do this. Coherentism, however, cannot be correct, for it does not take account of foundational warrant at all, although it can recognize the importance of the other varieties. Nor can strong foundationalism, as I have described it, be correct. All forms of foundationalism acknowledge the importance of foundational warrant and inferential warrant. Variations of strong foundationalism (as I, as well as Bonjour and Tramel, define foundationalism) might allow for the importance of coherential warrant to *non*-basic beliefs. Well and good. But coherential and inferential warrant are relevant even to the warranting of beliefs which have foundational warrant, and a strong foundationalism cannot acknowledge this. A foundationalism which is weak in the relevant sense can. So the correct and complete account of the structure of knowledge must be either a weak foundationalism or a foundherentism.

For my part, I think the correct view of the structure of knowledge is a weak foundationalism, not a foundherentism. While both views can recognize the importance of these three varieties of warrant, there is a key difference. Are there any beliefs with enough foundational warrant to qualify as knowledge without additional warrant of the inferential or coherential variety – are there any beliefs which can be *properly basic*? I happen to think that there are some, and so as long as I remain persuaded of this I suppose I shall remain a weak foundationalist. But I will not defend this view here.³⁰

In short, of the contenders I have considered – strong and weak foundationalism, coherentism, foundherentism – only a weak foundationalism or a foundherentism could meet the criterion of ascribing to the three varieties of warrant I have described their necessary roles. So the correct and complete account of the structure of knowledge must be a version of weak foundationalism, or foundherentism, or some other view which is not on the market – or at any rate which I have not heard of.

³⁰ On Haack's definition of foundationalism, it seems my view would more properly be designated a form of *foundherentism*, though not precisely the same as hers.

D. A Note on Infinitism

So far I have looked at strong and weak foundationalism, coherentism, and foundherentism. One additional view on the structure of knowledge calls for examination. Infinitism is a minority view.³¹ It occupies a position which I suppose it was inevitable some philosophers would occupy – one of the possible explanations of the source of inferential warrant. Inferential warrant is a sort of regress, a chain of reasons. If the question is asked what causes a belief to have inferential warrant, one philosopher will answer that it got its warrant from some other belief that did not get its warrant from any other source; another philosopher will answer that it got its belief from a myriad of beliefs, ultimately including itself; and a third philosopher will answer that it got its warrant from a never-ending chain of warranted beliefs. The first two answers are those of the foundationalist and coherentist, respectively.³² The last position is infinitism.³³ Infinitism, it should be understood, is not committed to the claim that, in order to have justification for one belief, a person must *have* an infinite number of supporting beliefs. Infinitism is simply the claim that, in order for my belief that *P* to be warranted, there must be an infinite number of reasons *available* to support my belief that *P* and that, furthermore, I believe a fair number of them. In short, every warranted belief must be supportable by further warranted beliefs, and this in a non-circular way; for, as Peter Klein and John Turri put it, it is *not* the case that “there is any reason which is immune to further legitimate challenge.”³⁴

Now it seems to me that one of two things must be true of infinitism: *either* that it does not entail any alternative view on the role of inferential, coherential, and foundational warrant in the structure of knowledge, *or* that it is simply mistaken. Either way, it does not constitute a viable alternative to foundherentism and weak foundationalism.

To explain: If infinitism is correct, one of two things must be the case. Either an infinite chain of reasons must be available for a belief to have *any warrant at all*, or an infinite chain of reasons must simply be available for a belief to *get more warrant*.

If the former, then infinitism excludes foundational warrant, making all warrant derivative from other beliefs, and accordingly it must be false for the same reason a pure coherentism must be false.

³¹ Peter D. Klein and John Turri, “Infinitism in Epistemology,” *Internet Encyclopedia of Philosophy* (2013); <http://www.iep.utm.edu/inf-epis/>, Section 2.

³² Language redolent of cosmological arguments is easily used to describe foundational warrant in particular. Chisholm famously did so, comparing a basic belief to ‘a prime mover.’ (Chisholm, *The Foundations of Knowing* (Minneapolis: University of Minnesota, 1982), 80)

³³ Klein and Turri, “Infinitism in Epistemology,” Section 1.

³⁴ Klein and Turri, “Infinitism in Epistemology,” Section 1.

But if the latter, then infinitism, thus far, presents no objection to my analysis, for it is simply the view that every belief, no matter how much foundational warrant it possesses, requires inferential warrant in order to have the maximal degree of warrant that is possible for it. But this claim is consistent with foundherentism, and even with weak foundationalism as I have articulated it here.

Moreover, infinitism either will or will not allow for inferential and coherential warrant to be important at all levels of knowledge. If it *does not*, then, again, it is simply mistaken, for, for reasons I have already articulated, these varieties of warrant are important at all levels of knowledge. But if it *does*, then it is, thus far, consistent with foundherentism and with weak foundationalism.

Now, accompanying his claim that every belief, no matter how well foundationally warranted, requires inferential warrant in order to have maximal warrant, the infinitist is likely to insist that no amount of foundational warrant is sufficient by itself to make the difference between knowledge and mere true belief.³⁵ Now this amounts to an objection to weak foundationalism; but it does not amount to an objection to my view that foundational warrant is a necessary component of the structure of knowledge, and in any case negotiating between foundherentism and weak foundationalism is outside the scope of this article.

In short, infinitism either is simply mistaken, and thus is not a viable alternative view of the structure of knowledge; or else it is simply an interesting view about the *increase* of warrant for a belief that already has some warrant; in this case it is compatible with my claim that all *three* types of warrant are necessary, and is compatible with foundherentism, and perhaps also with weak foundationalism as I have articulated it.

VI. Conclusion

In summary, there are three ways for a belief which is fitted into the structure of knowledge to be warranted: by having warrant that does not derive from elsewhere in the structure of knowledge, by receiving warrant from a small number of other warranted beliefs that support it, or simply by being consistent with or lacking improbability relative to a large number of warranted beliefs. In the structure of knowledge each of these three varieties of warrant is crucial, and the latter two are important at all levels of knowledge. Therefore, recognizing this is a criterion for the correct and complete account of the structure of knowledge. Pure coherentism does not acknowledge the importance of the first of these varieties of warrant, and strong foundationalism cannot acknowledge the importance of all three varieties of warrant

³⁵ Klein and Turri, "Infinitism in Epistemology," Sections 1 and 3.c.

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for beliefs that have the first variety. Both foundherentism and a foundationalism which is weak in the sense I have described can satisfy this criterion for the correct and complete account of the structure of knowledge. A version of infinitism may be viable, but it is not a viable alternative. Therefore the correct and complete account of the structure of knowledge must be a form either of weak foundationalism or foundherentism.

I do not pretend that there are any entirely original insights in this article. My contribution is both more modest and more ambitious than to give an account of the structure of knowledge. *More modest* because I am not presenting a new account of the structure of knowledge, but combining various components of the accounts of the structure of knowledge offered by other epistemologists, and arguing for the necessity of each of these components in the true and complete account of the structure of knowledge. This requirement may indeed be met by some views of the structure of knowledge offered by other epistemologists, and it is certainly consistent with several. Yet even this modest contribution is significant: Some epistemologists, such as Plantinga and perhaps Haack, neglect or underplay the significance of some of these components, particularly coherentist warrant's relevance at all levels of knowledge. Their accounts of knowledge would be stronger if supplemented by this insight.

Yet there is a sense in which my contribution is also much *more ambitious* than merely to submit an account of the structure of knowledge, for if my analysis is correct then so is the suggestion I must now make: that the epistemological project of describing the structure of knowledge has been successful, and is indeed on the verge of a successful *completion*. All that remains to this project is to determine for sure whether there are properly basic beliefs in the sense I have described above. If there are, then weak foundationalism is the correct view of the structure of knowledge; if there are not, foundherentism is.

For my part, I believe that there are some basic beliefs, and that most or all of them are among the category of common-sense principles such as Thomas Reid described: the existence of the self, of the world outside the mind, and of other minds; the general reliability of the senses and reason; etc. But explaining and defending this view would be opting for weak foundationalism over foundherentism, and that is a project for another article.³⁶

³⁶ I wish to thank the students of my Epistemology classes of Fall 2012 and Fall 2014 at Forman Christian College for all the rewarding conversations; my former student Hadeel Naeem is developing an epistemological view very similar to my own, and conversations with her have been particularly helpful. Most importantly, I wish to thank the great epistemologists whose writings have taught me how to think about these matters. If I have seen things clearly, it is only because I am standing on the shoulders of giants.