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Proper functionalism: A better alternative?

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Abstract. In this paper, I develop some internal problems with Alvin Plantanga's proper functionalist epistemology. I focus on: (1) how we know that a belief is the result of proper function and the special difficulties this occasions for religious beliefs; (2) what a properly functioning person should believe in various circumstances, and (3) the problem of design – whether the claim that God designed us can be reconciled with the claim that He was subject to trade-offs, compromises and unintended by-products. These serious internal problems cast doubt upon proper functionalism's fruitfulness as a theory of knowledge.

Alvin Plantinga has recently published two books, *Warrant: The Current Debate* (hereafter *WCD*) and *Warrant and Proper Function* (hereafter *WPF*), which have proven to be original and stimulating approaches to epistemology.[1] There has recently been an outpouring of criticism of these volumes, but some important issues have not yet been addressed. In this article, I intend to fill that void.

To begin, there are two main lines of argument in *WCD* and *WPF*, or what might be better called two main theses. There is the negative thesis (predominantly carried out in *WCD*) that none of the prominent contemporary theories of knowledge succeeds in providing an adequate account of knowledge. I will not examine this thesis here. There is also the positive thesis which is Plantinga's own theory of knowledge (mainly carried out in *WPF*), and which for lack of a better name, we may as well refer to as proper functionalism. It is proper functionalism I will be examining in this article. My main contention is that Plantinga's theory does not provide an adequate account of knowledge, mainly because even if it were able to accommodate most of our intuitions, it is plagued by its own very serious internal problems such that it cannot be reasonably claimed to constitute an advance in our understanding of the nature of knowledge. In other words, Plantinga's theory raises at least as many problems as it solves, if it solves any. Moreover, his theory is not as unified and simple as he seems to think, making one wonder if, in sum, it is really much better than its prominent contemporary rivals (e.g. reliabilism, coherentism).

The topics to be covered are the following: (1) a sketch of proper functionalism itself; (2) a generality problem for proper functionalism (or at least

[1] *Warrant: The Current Debate* (New York: Oxford University Press, 1993); *Warrant and Proper Function* (New York : Oxford University Press, 1993).

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an analogue of the generality problem for reliabilism); (3) the problem of determining what's in the design plan (i.e., what does a properly functioning person believe?); and, (4) the problem of design (to be explained shortly) as related to the problem of evil. Let us take each in turn.

I. PROPER FUNCTIONALISM SKETCHED

Plantinga's epistemology is an approach to the general topic of Plato's *Theaetetus* – what is knowledge and how is it distinguished from mere true belief? – but he expends much of his energy on the topic of *warrant* rather than (directly) on knowledge. What, then, is warrant? Warrant, says Plantinga, is that which added to true belief constitutes knowledge.[2] (We might also note that Plantinga at least accepts the analysis of knowledge as a species of true belief.)

Plantinga's account essentially proposes four conditions for a person S's belief p being warranted: (1) S's cognitive faculties must be functioning properly, or more exactly, the modules or segments of the design plan that produced p must be functioning properly; (2) S must be in the right cognitive environment, i.e. one sufficiently similar to that for which S was designed; (3) the modules of the design plan involved in the production of p must be aimed at truth; and (4) S's design plan (to be explained shortly) must be a good one. If and only if all four of these conditions are satisfied, then p is warranted, and if p is true, p constitutes knowledge for S. Moreover, according to Plantinga these four conditions characterize the central, paradigmatic core of our concept of warrant, that is, they hold (with some qualifications), for the 'main modules' of our epistemic establishment, such as self-knowledge, memory, perception, *a priori* knowledge, and induction.[3]

The notion of a design plan is central in Plantinga's account of warrant, and is contrasted with the notion of a max plan. 'The design plan of an organism or artifact specifies how it works when it works properly: that is (for a large set of conditions), it specifies how the organism *should* work'.[4] The max plan basically takes into account a much broader range of circumstances than the design plan, not just those which the designer – in the paradigm, artifactual case – has in mind.

Plantinga claims that our cognitive faculties have a design plan, in some sense hard-wired into us, and that it was designed by God. The latter claim requires some explication. Near the beginning of *WPF*, Plantinga claims that his theory of warrant does not by itself imply that we have literally been designed – by God or nature – at all. Rather, Plantinga is using design-talk

[2] Preface to *WPF*, p. v.
[3] Plantinga says this in many places, e.g. *WPF*, pp. 47–8 and *WCD*, pp. 214–15.
[4] *WPF*, p. 22.

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in a way that is neutral between metaphysical naturalism and metaphysical supernaturalism, only committing us to the commonsense view that for an entity to function properly is for it to function in a particular way, and that such entities have functions or purposes.[5] However, in chapter 11 of *WPF* he argues that there is no coherent naturalistic account of the notion of proper function, and on the supposition that, as he says, there 'really are (for natural organisms) such things as proper function, damage, design, dysfunction, and all the rest',[6] it follows that naturalism is false. Plantinga also claims that the only plausible alternative to naturalism is supernaturalism (read: theism), and so this turns out to be an argument for adopting theism.[7] In Section IV of this paper I consider the problems that arise for Plantinga's position when he conjoins the claim that our cognitive faculties are designed by God, with the claims that God had to make certain trade-offs and compromises in the design plan, and that there are unintended by-products in the design plan. In effect, I argue against the alternative to naturalism which Plantinga is proposing, pointing out that the theistic account faces serious difficulties of its own.

By way of situating Plantinga vis-à-vis the main issues of contemporary epistemology, we should note that his theory of knowledge is foundationalist in that it retains the notion of beliefs warranted but not on the basis of other beliefs (basic beliefs, and if they result from proper function, properly basic beliefs), externalist in that none of the conditions of knowledge are something of which the subject must know or even be aware of, and his notion of warrant is non-deontological in nature. His theory also retains a strong connection with reliabilism as seen in his explication of the fourth condition of warrant. A good design plan is one in which a belief p produced by properly functioning faculties whose modules responsible for the production of p are aimed at truth, in a congenial environment, has a high objective probability of being true.[8] In other words, a design plan is good if for any belief p, supposing that all of the other conditions of warrant are satisfied, p has a high objective probability of being true. Thus can Plantinga say that reliabilism is 'a zeroeth approximation to the truth'.[9]

Before we move on, it will be helpful to take a closer look at Plantinga's treatment of the notions of design plan/max plan, trade-offs and compromises, and unintended by-products. The design plan tells us, roughly, what the appropriate cognitive response is in some subset of all logically possible circumstances. The design plan, furthermore, contains a set of triples: circumstance, response, and purpose or function, which dictate how

[5] *WPF*, p. 13.
[6] *WPF*, p. 214.
[7] Plantinga says as much in several places, e.g. *WPF*, pp. 213–14, and again on p. 237. I would like to thank an anonymous referee for helping me clarify in what sense Plantinga claims our design plan has been designed by God, and, accordingly, the status of this paper as a response to his position.
[8] *Ibid.* p. 17.
[9] *WCD*, p. 214.

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the organism or artifact should respond in various circumstances.[10] The design plan has its limitations, however; it only specifies how the thing in question should work under those circumstances 'that in some sense (in the paradigm artifactual case) the designer(s) plan for, or have in mind, or intend'.[11]

In general, the max plan takes into account those circumstances not included in the design plan, i.e. 'it is not a description of how the thing works under just those circumstances (as in the paradigm cases) the designer plans for or takes into account'.[12] The max plan is a complete set of circumstance – response pairs that describes what will happen to the thing in circumstances such as when 'it is broken or damaged or destroyed as well as what it will do when functioning properly'[13] within the constraints that the thing 'retains its approximate present structure in circumstances involving the natural laws that do in fact obtain'.[14]

Plantinga also distinguishes between 'what the thing in question is designed to do and *unintended by-products* of the way it works'.[15] His example of an unintended by-product is that of a refrigerator which, when touched by a screwdriver on a certain wire, makes a 'loud angry squawk'.[16] The sense in which the loud squawk is unintentional or accidental is not that it happens by chance or isn't caused to happen; it is 'accidental, rather, from the point of view of the intentions of the designer'.[17]

We must make one more stop in this whirlwind tour of Plantinga's epistemology. Plantinga considers the following kind of objection. In cases where the cognitive response r is misleading, e.g. cases of perceptual illusion, there does not seem to be cognitive malfunction. When the unwary perceiver mistakes the straight stick in water for a bent stick, he is not malfunctioning; yet, according to Plantinga, even if by chance the stick were actually bent, the result would not be warrant. Why not?

The answer, says Plantinga, has to do with trade-offs and compromises.[18] Our cognitive faculties have been designed by God but He had to work within certain constraints, such as that, 'the system be realized within a certain sort of medium (flesh, bone and blood rather than plastic, glass, and metal), a humanoid body … in a certain kind of world, with certain kinds of natural laws or regularities'.[19] The main purpose of our cognitive system is to produce true beliefs, but it was not possible – or the price was too high – for God to design a system which produced true beliefs on every occasion within these kinds of constraints.

Thus, God made some trade-offs and compromises in the design plan. The end result is a cognitive system which 'works well in the vast majority of circumstances; but in a few circumstances it produces false belief'.[20] Mis-

[10] *WPF*, p. 22. [11] *Ibid.* p.23. [12] *Ibid.* [13] *Ibid.* pp. 23–24.
[14] *Ibid.* p. 23. [15] *Ibid.* p.24. [16] *Ibid.* [17] *Ibid.* [18] *Ibid.* p. 38.
[19] *Ibid.* [20] *Ibid.* p. 39.

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leading cognitive responses – such as perceptual illusion cases and cases of belief in false testimony – are, generally, the result of trade-offs and compromises in the design plan. They are produced by segments of the design plan which do not directly serve the main purpose of getting truth but rather do so indirectly. To return to the previous question, misleading cognitive responses which result from proper function do not have warrant because, 'a belief has warrant for you only if the segment of the design plan governing its production is directly rather than indirectly aimed at the production of true beliefs'.[21]

II. A GENERALITY PROBLEM FOR PROPER FUNCTIONALISM

The generality problem is a problem for reliabilism, raised to prominence by Richard Feldman and commented on by many others.[22] It does not apply exactly to Plantinga's theory, but an analogue of it seems to. Appropriately enough, Feldman himself develops the problem for proper functionalism. However, let us first briefly see how the problem arises for reliabilism.

Generic reliabilism, or what we might, following Plantinga, call 'paradigm reliabilism', holds that a belief is justified if and only if it is produced by a reliable process, and the degree of its reliability varies in direct proportion to the reliability of the process that produced it.[23] Now, reliability is a property of types of belief forming processes, and any belief is a token of many different types. Moreover, typically the reliability of types will vary. So, for any given belief p, which type of belief forming process ought we to focus on? As Feldman says, 'We have no idea what the theory implies about the epistemic status of beliefs until we know which types are relevant to their evaluation. Without specifying relevant types, the theory is seriously incomplete'.[24]

Feldman argues that something similar holds for proper functionalism. The situation is not identical, for while every belief forming process is a token of many different types, if Plantinga's theory is correct, then there are not many different modules or segments of the design plan responsible for producing the belief. If Plantinga is right, there are modules or segments of the design plan, and 'there is a fact about which module a belief results from'.[25] Feldman's central objection is that, at present, we do not know whether the cognitive system has modules or segments, and more importantly (since he seems willing to concede the previous point), we do not know what the modules are actually like. Since we do not know what the modules

[21] *Ibid.* p. 40.

[22] Richard Feldman, 'Reliability and Justification', *The Monist* **68** (1985), 159–74. The characterization of the problem given here is largely due to Feldman.

[23] *WCD*, p. 198.

[24] 'Proper Functionalism', p. 41 in a symposium on proper functionalism (also participated in by Ernest Sosa) in *Nous* **27**: 1 (1993). Plantinga's response – 'Why We Need Proper Function' – is contained in the same volume.

[25] 'Proper Functionalism', p. 43.

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are like, we are in no position to specify, for any given belief p, whether the modules producing p are functioning properly, or if they are aimed at truth, or if there is a high objective probability of p being true given that it has been produced by these modules. Thus, it is (at present, anyway) impossible to apply the theory and see what kind of implications it has, and in this sense it faces the same problem as reliabilism.[26]

Plantinga's response is informative although not entirely adequate. He essentially denies that, in the absence of information about what the modules of the design plan are like, we cannot tell whether there is proper function, or whether the modules involved are aimed at truth, or whether the belief produced has a high objective probability of being true. With respect to Feldman's belief that he sees a large number of people (presumably occasioned by the experience of seeing a large number of people), he says:

> But what, exactly, is the problem? … So are the cognitive faculties involved in the production of Feldman's belief functioning properly and aimed at truth? I should think so. Is the cognitive environment appropriate for his kind of cognitive system? It certainly seems so. And is there a high objective probability that a belief produced by these faculties (the ones involved in the production of Feldman's belief) functioning properly in an appropriate environment will be true? I see no reason to doubt it. So I don't really see the problem here.[27]

Thus, the dispute between Feldman and Plantinga on this point boils down to whether we can tell if Plantinga's conditions for warrant are fulfilled independently of knowledge about the modules or segments of the design plan involved, knowledge that is admitted to be lacking by both sides. Feldman says we cannot, Plantinga says we can. What is interesting is that neither one of them gives any reason in favour of his position; they seem to be merely begging the question against each other.

I wish I could give an answer to this question, at least in general. Plantinga's answer gains whatever plausibility it has (and I think it has some) because of the fact that the belief in question is a relatively uncontroversial one. I suspect that what Plantinga is really doing is appealing to common sense, or if you prefer, widely shared intuitions. Of course, believing that one is seeing a large number of people when one has the visual experience of seeing a large number of people is the result of proper function. People do it all the time, it is perfectly normal. Of course, Feldman's belief is the result of faculties aimed at truth; what else could they be aimed at? And so on. The strength of Plantinga's position rests upon the strength of the intuitions to which he is appealing, and they appear to be rather strong.

But Plantinga's approach has its limitations. In particular, it has trouble accommodating cases of controversial belief. Perhaps Feldman is one of those who questions common sense on this point. What can Plantinga say? Pre-

[26] *Ibid.*

[27] 'Why We Need Proper Function', p. 73.

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sumably he doesn't want to say, 'Well, my theory only works for those who share my intuitions'. Perhaps he holds that there is a presumption in favour of common sense when it comes to whether a particular uncontroversial belief is the result of proper function, whether the modules producing it are aimed at truth, and whether the belief is likely to be true given the fulfilment of the other conditions for warrant. But why think that? Certainly Plantinga has given us no argument for this presumption (if this is what he holds), and it is not clear that any good argument is available.

To reinforce this point, consider the following sort of argument. Premise: Most people (this can be made stronger – nearly everyone, a great majority, etc.) believe p in circumstances C. Conclusion: It is normal (in the normative, non-statistical sense) for people to believe p in circumstances C.[28] This argument appears to be blatantly invalid. But perhaps I have left out a premise (or premises). What would the missing part(s) be? I can't think of any non-question begging premises to add, or at least, nothing that wouldn't itself require a substantial amount of argument that might itself be dubious. My point isn't that no good argument is possible for the intuitively appealing conviction that beliefs like the one Feldman describes arise from proper function, but rather that finding such an argument appears to be a very difficult task, and to be really convincing, Plantinga needs such an argument. Thus, while it may not face an impossible problem, Plantinga's theory at least faces a rather difficult one.

The problems facing Plantinga discussed so far really stem from a more basic issue that he does not even begin to address adequately: what's in the design plan? This issue is more basic and general than the one Feldman raises, and deserves a section all of its own.

III. WHAT'S IN THE DESIGN PLAN?

Recall that the design plan contains a set of triples: circumstance, response and function.[29] The circumstance concerns the environment the subject is likely to be in, the response presumably will be something like 'believe p' (and perhaps something specifying how strongly p is to be believed), and the function presumably will be something like 'believe for the sake of truth' or 'believe for the sake of preserving psychological well being'. Now, the issue is, how do we know what a properly functioning person is supposed to believe in any given circumstance, and how do we know what the function of believing p is in any given circumstance? This amounts to the questions, what's in the design plan, and how do we know what's in it?

We have already noted some problems with the appeal to common sense and the argument from the fact that most people believe p to the claim that

[28] Presumably, proper function can be reached from normality, since it is one of the 'connected group of interdefinable notions' Plantinga associates with it. Cf. *WPF*, p. 4.

[29] *WPF*, p. 22.

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it is normal to believe p. We should be aware that the appeal to common sense occurs frequently in Plantinga's epistemology, or at the very least, Plantinga makes judgements about what properly functioning people do that he does not present any arguments for. For example, his 'solution' to the problem of other minds is simply that it is part of our design plan to believe that there are other minds and that they are much the same as our own.[30]

Now, I am willing to make the concession that Plantinga is correct when it comes to relatively uncontroversial beliefs like the belief that there is a tree in front of me when I am having the experience of seeing a tree in front of me, or the belief that another person is in pain when I see them stub their toe and hop around displaying pain behaviour. Where I am not willing to concede the point is when it comes to controversial beliefs, such as the belief that God (as conceived by theists) exists, and this problem cuts to the heart of Plantinga's theory.

I said earlier that Plantinga's position is most plausible when applied to uncontroversial beliefs. This plausibility evaporates when applied to controversial beliefs, such as belief in God. The appeal to common sense will not help, since there is no consensus on the matter (this seems to follow by definition from the meaning of 'controversial' belief). We should note that there are several distinct problems here. First, there is the problem of specifying what the appropriate response is for a properly functioning person in a certain circumstance. For example, what does a properly functioning person believe when, as an adult, he or she is exposed to Christianity for the first time? Second, there is the problem of determining what the purpose of a controversial belief is, which is itself a controversial matter. With regard to theistic beliefs, Plantinga is committing himself to it being true that they are, at least sometimes, aimed at the truth, setting himself squarely against some prominent schools of thought in the psychology of religion. Now, I don't want to take a stand on the psychology of religion, but it seems to me that Plantinga owes us some reason(s) to think that religious beliefs are (at least sometimes) aimed at the truth, which he has nowhere to my knowledge done.

Not only does Plantinga require that it be true that theistic beliefs be appropriate in certain circumstances, and that the purpose of such beliefs be to obtain truth, his theory also plausibly requires that it be true that there are no other appropriate responses in such circumstances. It is conceivable that in a certain circumstance there could be more than one appropriate response (it does partly depend on how broadly one construes the relevant circumstance). Suppose we consider the circumstance of a reasonably well educated adult, who has no strong prior beliefs about the matter and is confronted by Christianity for the first time, say by an honest, earnest believer. Presumably Plantinga wants to say that the proper response is to

[30] *Ibid.* pp. 74–5.

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believe, or at least to have a doxastic attitude that is conducive to believing in Christianity. Presumably he wants to say that there is something wrong with not believing. More generally, Plantinga presumably holds that the atheist is not, at least in general, functioning properly with respect to belief in God, and moreover, that people of other religious persuasions (say, Buddhist or Hindu) are not functioning properly. If he doesn't say this, then his theory leads to a kind of *balkanization* of proper function in which people with incompatible beliefs are functioning properly and (presumably) are equally warranted in their beliefs.[31] There's nothing incoherent or logically impossible about such a view (I have some attraction to it myself) but it is hardly conducive to a Christian view of the world.

The problem of specifying what's in the design plan has even more ramifications in Plantinga's epistemology. Plantinga defines a properly basic belief as that which a properly functioning person takes in a basic way, i.e. as not inferred from other beliefs.[32] Depending upon what's in the design plan, different propositions will be properly basic. Plantinga suggests that belief in God can be properly basic, but if the balkanization described above obtains (i.e. one can be a properly functioning atheist, or agnostic, or Buddhist …), then we have reason to think there will be a balkanization of properly basic beliefs.

There is one sort of response that I have not yet considered, namely, that we can determine what's in the design plan (at least in rough outline) if we have been designed by God. This would seem to be the way Plantinga is inclined, since he is well known for his ontological argument for the existence of God, and he has also given arguments that naturalism is self-defeating and that the only way to make sense of the notion of proper function is to suppose that we have been designed by God.[33] I have only space here to reply that I think there are good reasons for judging the arguments for the existence of God as at best inconclusive, and there are good reasons for judging his other arguments as flawed as well.[34]

In conclusion, the problem of specifying what's in the design plan is a particularly nasty one for proper functionalism, especially concerning controversial beliefs. At the very least it shows that the theory is unacceptable as it stands, and it goes some way toward showing that Plantinga's theory doesn't really constitute an advance in our understanding of knowledge since it creates its own set of serious problems. Moreover, it shows one way in

[31] Cf. Terence Penelhum, 'Parity is Not Enough', in *Faith, Reason, and Skepticism*, ed. by Marcus Hester (Philadelphia: Temple University Press, 1992), pp. 98–120.

[32] *WPF*, p. 183.

[33] Cf. *WPF*, chapters 11 and 12.

[34] On the inconclusiveness of the arguments for and against the existence of God see John Hick, *An Interpretation of Religion* (New Haven: Yale University Press, 1989). Regarding Plantinga's arguments against naturalism see Carl Ginet, 'Comments on Plantinga's Two-Volume Work on Warrant' and Richard Swinburne, 'Response to Warrant', both in a symposium on Plantinga's work in *Philosophy and Phenomenological Research*, Vol. LV, No. 2, June 1995, and also Timothy O'Conner, 'An Evolutionary Argument Against Naturalism?', *Canadian Journal of Philosophy* **24** (Dec. 1994), pp. 527–39.

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which Plantinga's theory is incapable of handling the diversity of secular and religious viewpoints.

IV. THE PROBLEM OF DESIGN AND THE PROBLEM OF EVIL

What I intend to do in this section is explore some of the relationships between Plantinga's work on the problem of evil and certain aspects of his proper functionalism. I will argue that Plantinga's epistemological theory faces a problem analogous to that of the problem of evil, but a solution analogous to the Free Will Defence seems unavailable.

In Section I we saw that Plantinga holds that human cognitive faculties have a design plan designed by God, and I briefly noted that Plantinga holds that God made certain trade-offs and compromises in the design plan and that there are certain unintended by-products in our design plan. In barest outline, the problem I am pointing out has to do with why an omnipotent and omniscient God would have to make trade-offs and compromises in the design plan, what sense it makes to say there could be unintended by-products in a design plan designed by God, and whether the distinction between design plan and max plan holds for God. For convenience call this *the problem of design*. I do not wish to mount an atheological argument with the problem of design as some have done with the problem of evil. Rather, my conclusion shall be that just as the problem of evil should occasion at least some serious reflection and analysis (which Plantinga has done admirably), the problem of design should similarly call for more reflection and analysis. The further conclusion to draw from this is that we have even more evidence that proper functionalism is unacceptable as a theory of knowledge and as support for Christian beliefs.

The basic outline of the logical problem or argument from evil is that it seems, at least at first glance, that the existence of evil is logically incompatible with the existence of God.[35] More specifically, it has seemed to many philosophers that these two propositions are logically inconsistent: (1) God is omnipotent, omniscient and perfectly good, and (2) There is evil. It is obvious that there is evil, so it is argued, and so (1) must be false, or rather, God as conceived in (1) does not exist.

Reasoning such as this is an example of an atheistic approach to the problem of evil. Another possible approach is to take the existence of evil *aporetically*, as generating a puzzle, a constructive challenge, a starting point for further analysis by the theist.[36] Alvin Plantinga is a shining example of this second approach. The Free Will Defence aims specifically to rebut the

[35] The logical argument from evil is distinct from the probabilistic argument from evil, which basically argues that the existence of God is improbable (but not impossible) given the existence of evil.

[36] The difference between these two approaches is nicely explained by Adams and Adams (eds.) in their introduction to *The Problem of Evil* (New York: Oxford University Press, 1990), pp. 2–3.

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charge of logical contradiction by establishing that the theist's beliefs – in particular, propositions (1) and (2) – are not logically inconsistent.[37]

The problem of design is not analogous to the problem of evil in the sense that Plantinga's epistemological theory is allegedly logically inconsistent or that an atheological conclusion can be reached from the problem of design. Rather, the problem of design is analogous to the problem of evil in that, just as the theist at least faces the difficulty of explaining why evil exists, Plantinga at least faces the difficulty of explaining why God would have to make trade-offs and compromises in the design plan, what sense it makes to say that there could be by-products in the design plan that God did not intend, and how the distinction between the design plan and the max plan holds for God. In other words, the problem of design is at least to be taken aporetically, as requiring further analysis and explanation to expurgate the pockets of conceptual darkness and confusion. The problem of design may cast a longer shadow than that, however; the sense which such traditional predicates as omnipotence, moral perfection and, particularly, omniscience have when Plantinga applies them to God becomes rather obscure.

Let us return to Plantinga's distinction between the design plan and the max plan. The former is said to cover those circumstances which the designer planned for, or had in mind, or intended, and the latter, roughly, everything else.[38] This seems unproblematic for the case of a human designer or team of human designers – but does it make sense for God?

In a recent exchange with Patrick Grim, Plantinga has had occasion to define what he means by 'omniscience'.

> Omniscience should be thought of as a maximal degree of knowledge, or better, as maximal perfection with respect to knowledge. Historically, this perfection has been understood in such a way that a being x is omniscient only if for every proposition p, x knows whether p is true (I understand it that way myself).[39]

Although Plantinga does not intend this definition to be what he might call a complete 'explication' of omniscience, he seems to think it is at least a step in the right direction. A little reflection will show, however, that, combined with his epistemological theory, this step is really a misstep.

For every circumstance c, there will be a proposition of the form 'c is actual at time t'. This proposition will be true if and only if c is actual at time t, and false if and only if c is not actual at time t. According to Plantinga's definition, for every proposition p, an omniscient being would know whether p is true,

[37] Plantinga, *The Nature of Necessity* (Oxford: Clarendon Press, 1974), p. 165.

[38] With regard to unintended by-products, the phrase 'plan for, or have in mind, or intend' (*WPF*, p. 23) presumably means that planning for, having in mind, and intending are all synonyms. But if this is the case, Plantinga appears to be wrong or at least using the word 'intend' in an unusual way. Planning for and having in mind are close synonyms, but it is possible for one to plan for or have in mind something undesirable which one did not intend. E.g. A theist might maintain that God planned for the eventuality that human beings would sin, even though He did not intend for them to sin.

[39] Alvin Plantinga and Patrick Grim, 'Truth, Omniscience, and Cantorian Arguments: An Exchange', *Philosophical Studies* **71** (3), p. 291.

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which means that for every proposition of the form 'c is actual at t', God would know whether that proposition is true. Now for God to know a proposition is presumably for Him to fully understand it. But if God knew and understood all propositions of the form 'c is actual at t', God would know for every possible circumstance c whether it was actual at t. But if God knew this, then there would be no circumstances which God would not have in mind, or plan for, since God would know whether any circumstance was actual at any time. Hence, the distinction between the design plan and the max plan does not hold for God.

The notion of unintended by-products is similarly problematic when applied to God. In the case of a human designer, there are many reasons why unintended by-products might occur – the designer may have done her best but not have foreseen the by-product because of inexperience or ignorance, or she may have not foreseen it because of carelessness, or any number of similar reasons. At first glance (and second, I suspect), however, none of these reasons applies to God. God could not be inexperienced, or careless, or uncaring, or ignorant (for He wouldn't then be God). How, then, could there be unintended by-products in our design plan?

Let me say a bit more about God's being ignorant as a possible explanation of how there could be an unintended by-product in God's creation. Besides the obvious incompatibility of the notion of ignorance with our intuitive understanding of omniscience, it is incompatible with Plantinga's own definition of omniscience. Take any feature f that might be a possible by-product in our cognitive faculties, such as the feature that unwary human beings tend to perceive a straight stick in water as a bent stick and to believe (at least temporarily) that the stick is in fact bent. There will be a proposition of the form 'f is actual at t' which will be true if and only if f is actual at t and false if and only if it is not. According to Plantinga's definition, for every proposition of this form, God will know whether it is true. Hence, God will understand every proposition of this form – but then God will know whether any feature is actual at any time, and there will be no features which could in any meaningful sense be 'unintended' for God.

The conclusion I am pressing towards is that there is a tension in Plantinga's philosophy that crystalizes on the notion of omniscience. Plantinga's definition of omniscience rules out the possibility of applying the notions of design plan versus max plan and of unintended by-products to God. So either Plantinga has to revise his definition of omniscience or admit that these notions do not apply to God.

In any case, to say that there are circumstances which God did not plan for or have in mind and that there are unintended by-products in something He designed seems inevitably to go contrary to our intuitive judgments about the nature of omniscience. There is a *prima facie* case for thinking that no explication of these notions will resolve the problem. And since Plantinga

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considers himself to be faithful to our ordinary epistemic notions, is he failing to live up to his own mandate?[40]

As we have seen, Plantinga claims that God made certain trade-offs and compromises in our design plan because it was not possible to have a cognitive system which delivered truth in every circumstance to be encountered in the cognitive environment for which it was designed and satisfy certain other constraints. Moreover, in several places Plantinga strongly suggests that our design plan is the best compromise available between the aim of having a cognitive system which delivers truth as much as possible and the other constraints to which God was committed.[41]

I want to address several issues in this regard that stand in need of further work. Although Plantinga does not explicitly state so,[42] it is reasonable to assume that he means it was not logically possible for God to design a perfect cognitive system[43] and satisfy the other constraints he was committed to. Now, the most obvious question is, is this true? Is it the case that there is no possible world God could actualize in which our cognitive systems deliver truth in all possible circumstances included in that world, and all the other relevant conditions (e.g. we have humanoid bodies, our cognition is mediated by brain and neural activity, the same natural laws as in the actual world obtain, etc.) are fulfilled?

The answer appears to be yes. For example, it may have been possible to design us with enormous brains capable of always obtaining truth, but we would then have been much less mobile, less able to defend ourselves, unable to play sports, etc. Of course, many of these undesirable consequences could have been avoided by making it so that the Earth's gravitation was weaker than it is in the actual world (say 0.5 G), but then we have changed one of the constraints. It is very difficult to imagine God creating us with perfect cognitive systems without thereby also changing one or more of the constraints to which God is (allegedly) committed.

On the other hand, suppose someone more astute than I were able to show that there is no logical impossibility in God actualizing a world in which we have perfect cognitive systems and all of the necessary constraints obtain.

[40] Plantinga considers himself to be the explicating our paradigmatic, intuitive ideas about warrant, belief, knowledge, and the like (Cf. *WPF*, p. ix), and presumably considers himself to be doing the same with our ideas about omniscience.

[41] *WPF*, p. 40.

[42] What he actually says on page 39 of *WPF* is: 'It may not be *possible*, for example, to satisfy these other constraints and also have a system that … produces true beliefs in every sort of situation …' (emphasis added). It seems obvious that unless we interpret Plantinga as referring to logical impossibility, his claim that God had to make trade-offs and compromises in the design plan has no hope of making sense.

[43] I propose a working definition of a perfect cognitive system as follows: a perfect cognitive system P is one which delivers truth in every situation S an agent A who instantiates P might possibly encounter in any sufficiently appropriate cognitive environment C. Obviously enough, a really 'perfect' cognitive system would have other virtues besides getting truth, but this definition is suitable for our purposes because Plantinga defines a good design plan in terms of the statistical probability of getting truth (e.g. *WPF*, p. 17) and often claims that the main purpose of our cognitive establishment is to get truth (e.g. *WPF*, pp. 216–17).

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There would then be reason to question why God did not actualize such a world. Would it be because God is really not omnipotent, omniscient and perfectly good? In that scenario, one could force Plantinga to choose, for example, between admitting that God, though 'omnipotent', could not have done it (in which case Plantinga would water-down the notion of omnipotence) or God could have done it but chose not to (then for what reason?). Philosophers have tried to force the theist into a similar (but not identical) disjunction with regard to the problem of evil. Is it that God, though 'omnipotent', could not have actualized a world containing moral good and no moral evil or is it that God was capable of doing so but chose not to (then for what reason?). With regard to trade-offs and compromises in the design plan, however, both disjuncts would seem to be undesirable for Plantinga, while only the second disjunct might pose a problem with regard to the problem of evil. In fact, Plantinga openly embraces the first disjunct in the Free Will Defence, quite reasonably holding that limiting God's omnipotence to what is logically possible is in fact no real limitation.[44] Since I doubt there is a good argument to set up such a scenario in the first place, I will proceed no further with this line of thought.

There is another important issue here. It may be true that it was not logically possible for God to create us with perfect cognitive systems without altering at least one of the constraints which He was committed to. But who cares if that was not logically possible? If it had been possible for God to design us so that we always get truth and the only trade-off would have been that we would have four fingers instead of five (or something similarly trivial), would it not have been better if God had done it (i.e. actualized that world instead of ours)?

Plantinga actually employs something like an implicit distinction between important features of possible worlds and unimportant ones.[45] Important features are those which God could not have traded-off without thereby making a worse overall compromise than in the actual world. For example, the feature of humour is presumably an important feature of the actual world such that if God could have designed us with perfect cognitive systems only by removing our sense of humour, such a compromise would have been worse than the actual one.

At this point an interesting parallel with the Free Will Defence presents itself. Could Plantinga argue that it was not logically possible for God to have created us with perfect cognitive systems and at the same time preserve our freedom (freedom in the incompatibilist sense, let us suppose)? Freedom is surely an important feature; if it was the case that God would have had to have sacrificed or significantly limited our freedom in order to give us

[44] *The Nature of Necessity*, p. 167.

[45] This distinction might also be phrased in terms of absolutely desirable and relatively desirable features. However one spells this out, I think the intuitive idea is fairly clear.

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perfect cognitive systems (or even ones better than what we actually have), wouldn't that be an eminently laudable reason for making trade-offs and compromises in the design plan?

The answer is, yes that would be a superlative reason for making trade-offs and compromises, if it were the case that God could not have had both freedom and perfect cognitive systems. But I see no reason to think that is the case. What is it about our ability to discern truth that would limit our freedom? And even if our freedom would have to be limited to a small extent, the resulting gain in cognitive power might be worth it. It appears that this line of argument is not very promising for Plantinga.

What is interesting about the notion of trade-offs and compromises in the design plan is not whether God could have made us with perfect cognitive systems without sacrificing any of the set of constraints He was committed to. We can freely admit that Plantinga is correct about this point and that it poses no threat to God's omnipotence. What we should not admit (without further argument) is that it was not logically possible for God to design us with perfect cognitive systems (or at least ones which deliver truth more often than our actual cognitive systems) without thereby sacrificing at least one of the important features that obtain in the actual world.

This leads us to further issues. What are the important features of our (the actual) world? What underlies judgments such as: it would have been worthwhile to sacrifice a finger to get perfect cognitive systems but not worthwhile to sacrifice our capacity for humour? How do we know that our present cognitive faculties are the result of the best possible compromise? All that would be required to demonstrate that our present faculties are not the best possible would be to find a compromise which preserved all of the important features of the actual world and overall was more cognitively powerful (in terms of delivering truth) than our actual cognitive systems. Admittedly, this would be a formidable task, since even determining what counts as important features (and furthermore, enumerating all of them) would require considerable argument; but the same task awaits Plantinga if he really wants to establish that our present cognitive establishment is the best possible, rather than merely assert or suggest it is.[46]

There are several directions one can take these considerations. If one were able to demonstrate that our present compromise is not the best one God could have actualized, one might have the ammunition to question one or more of His attributes, e.g. His goodness or perhaps His competence as a designer. One might argue that the fact (if it is a fact) that our cognitive systems are not the best possible makes it improbable that God is as He is conceived in traditional theology (i.e. perfect, understood as entailing om-

[46] For example, is it an important feature that the speed of light be (about) three hundred thousand kilometres per second? What would another possible world be like with the speed of light double what it is in actuality? It is not at all easy to see all of the ramifications of adding, omitting, or altering features of the actual world, yet clearly an overall value judgment requires such meticulous calculation.

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niscience, omnipotence, etc.) Put differently, one could argue that the existence of such a God (although not, perhaps, of a less-than-perfect God) is improbable given this (alleged) fact. This kind of argument is obviously analogous to the probabilistic argument from the existence of evil.

I do not wish to undertake anything so ambitious. Rather, it seems to me we can safely conclude that Plantinga has not established that our cognitive systems are the best ones possible, although he may be (uninterestingly) right about the logical impossibility of God designing us with perfect cognitive systems and satisfying all the set of constraints He was committed to. What is certain is that Plantinga's treatment of trade-offs and compromises in the design plan is rather cursory and there remain many difficult issues to be explored.

V. CONCLUSIONS

My main point in the previous section is that just as the problem of evil constitutes at least an aporetic problem for theists (to which Plantinga has responded relatively well), the problem of design constitutes at least an aporetic problem for Plantinga. I fear that Plantinga's conception of the design plan, specifically in regard to his notions of unintended by-products, the design plan versus the max plan, and trade-offs and compromises, suffers from problems of an even more serious nature than those posed by the problem of evil. It is very problematic how the first two notions are supposed to apply to God; they seem far more at home for imperfect, limited, far-from-omniscient human beings.[47] In fact, the claim that they do apply to God raises questions about God's nature. The notion of trade-offs and compromises raises issues about God's omnipotence and questions about whether in fact our cognitive systems really are the best ones possible and how such a judgment would be made.

Taking into account these problems I have collectively called the problem of design, the problems with identifying what a properly functioning person believes in a given circumstance (and what the purpose of the belief would be), and the threat of a balkanization of proper function and consequently of properly basic beliefs, we have ample evidence to indicate that Plantinga's epistemology is beset with serious internal problems that make it quite problematic as a theory of knowledge. Thus, the likelihood of proper functionalism providing epistemic support for Christian beliefs seems rather small.[48]

[47] We can describe Plantinga's mistake in terms of his own metaphilosophy: getting too far away from the paradigmatic core of the application of a concept. The paradigm cases in which the notion of unintended by-products and the distinction between design plan and max plan make sense are all cases of design by fallible, imperfect, limited beings (such as humans). Plantinga tries to make these notions work for design by God and they don't; the analogical extensions simply don't stretch that far.

[48] This article is taken in large part from chapter VI of my M.A. thesis, completed in Jan. 1996 at the University of Alberta, entitled *William Alston and Alvin Plantinga on the Rationality of Religious Belief*. I wish to thank the members of my thesis committee, Dr Bernard Linsky, Dr Alexander Rueger, Dr Leo Mos, and particularly my supervisor, Dr Bruce Hunter, for their insightful comments and criticism.

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