Idealism and Fine-Tuning[1]

In this chapter I will argue that, given certain background assumptions, a version of idealism follows from a version of the fine-tuning thesis. The chapter will be divided into five sections. In the first, I will distinguish among different versions of idealism and indicate the one that is at issue in my argument. In the second section, I will do the same for versions of the fine-tuning thesis. In the third, I will show how we can derive the relevant version of idealism from the relevant version of the fine-tuning thesis, so long as we make certain further assumptions, in particular, assumptions about the nature of explanation. In fourth, I will discuss the relation between idealism and observer selection effects. And in the final section, I will expand on the arguments already given, and argue that similar reasoning may lead us to the surprising conclusion that consciousness is the final cause of the universe.

1. Varieties of Idealism

There are various philosophical positions that could be described as idealistic. What these have in common is that they all assign some kind of priority to the mental. They differ, however, concerning the kind of priority they assign.

One form of idealism is *ontological*. This is the view that only the mental (e.g., minds and mental states) exist. Ontological idealists can be either *eliminativists* about physical objects (maintaining that physical objects don't exist or are unreal) or *reductionists* about physical objects (maintaining that physical objects, or facts about such objects, are identical with or constituted by mental objects or facts about such objects).

While, when people refer to idealism, it is often ontological idealism that they have in mind, it would be a mistake to regard this as the only form of idealism. Consider, for example, Immanuel Kant. Kant never claimed that tables and chairs, sticks and stones, don't exist or that they are unreal. Nor does he claim, with Berkeley, that such objects are composed of mental states, or that we eat, drink and clothe ourselves in ideas (Berkeley, 1982, §38). To the contrary, he explicitly affirmed the mind-independent existence of physical objects.[2] Rather, his fundamental idea was to carry out a kind of Copernican revolution in philosophy, understanding objects in terms of our experience of them rather than vice versa. On this view, it is only possible to have experience of objects if these objects satisfy certain conditions. Thus, we can deduce important features of the *objects* of our experience (e.g., facts about their causal and spatio-temporal relations) from the *existence* of experience, and hence from the existence of

[2] See the "Refutation of Idealism" in Kant, 1998. See also Kant, 2004, 4: 289.

something mental.[3] The priority that experience has, for Kant, is not the priority of material constitution, nor is it the priority efficient causation. Rather, it is an explanatory priority: by considering what is required for experience to exist, we can derive necessary truths about the objects of experience.

Something similar is true of the post-Kantian German idealists. Fichte and Hegel both begin with the idea that the self (Das Ich) or Spirit (Geist) must be free or spontaneous and at the same time self-conscious and hence aware of its own freedom—it must, in Hegel's words, be "for-itself" what it is "in-itself" (Hegel, 1977, §25 and Hegel, 1991, §10). And, as necessary conditions for the possibility of such self-conscious freedom, these philosophers deduce a wide range of conclusions not only about the physical world of nature, but also about human society, history and culture (See Fichte, 1992 and 2000 and Hegel, 1990).

Let us call the kind of idealism that assigns explanatory priority to the mental *explanatory idealism*.[4] A question arises concerning the *scope* of such mentalistic explanation. In order for a view to count as an example of explanatory idealism, how many facts must this view imply are explainable in mentalistic terms? Must it imply that *all facts* are so explainable? Must it imply, for example, that something mental explains the precise number of hairs on each person's head, the precise shape of every coastline, and the precise moment at which each radioactive atom decays? By this criterion, Kant and the post-Kantian German philosophers would not count as explanatory idealists, since their explanatory ambitions don't seem to stretch this far. Does it suffice for the view to imply that *some facts* have mentalistic explanations? By this criterion, just about everyone will count as an explanatory idealist, since just about everyone (apart from eliminativist materialists such as the Churchlands (1981 and 1986)) grants that some human actions can be explained in terms of the beliefs and desires of the agents, and hence that some facts have mentalistic explanations. What we should recognize is that there is a spectrum of views about the scope of mentalistic explanation and that, correspondingly, explanatory idealism comes in degrees. In order for a view to count as an instance of explanatory idealism, it must extend the realm of mentalistic explanation beyond that of folk psychology and maintain that something mental can explain a range of important phenomena that appear, prima facie, to be mind-independent. And the greater the scope of such phenomena that a view implies to be amenable to mentalistic explanation, the more this view will count as idealistic, in the explanatory sense.

A related question concerns not the scope of propositions that a view implies are amenable to mentalistic explanation, but rather the *role* that the mental plays within these explanations. To count as an instance of explanatory idealism, a view must imply that the mental plays an *important* role in explaining the phenomena in question. But there will be a spectrum of forms

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[3]In Kant, 1998, see the preface to the second edition as well as the section entitled "On the Supreme Principle of All Synthetic Judgments."
[4] John Greco discusses explanatory idealism in his contribution to this volume.

of explanatory idealism that differ in the explanatory role they assign to the mental—stronger forms of explanatory idealism assigning greater explanatory roles. At the extreme end of the spectrum, the strongest versions of explanatory idealism will imply that mentalistic claims *alone*, without any additional background assumptions, suffice to explain the apparently mind-independent phenomena. But to count as an instance of explanatory idealism, a view needn't have this extreme implication, and traditional forms of explanatory idealism don't seem to be committed to it.

2. Varieties of Fine-Tuning

Let's begin with a general definition of fine-tuning. For any paremeter P and condition C, let us say that P is fine-tuned for C just in case:

(i) Holding fixed the factors relevant to C other than the value of P, the range of possible values of P that are compatible with C is much smaller than the range of possible values of P that are incompatible with C.

(ii) The actual value of P is among those values which, holding fixed these other factors, are compatible with C.

As an illustration, let us suppose that Goldilocks enjoys eating porridge only if it is between 71.3 and 71.4 °C. And suppose Baby Bear's porridge is precisely 71.37 °C. In this case, Baby Bear's porridge will count as fine-tuned for Goldilocks' enjoyment. Note that, in order for it to count as so fine-tuned, it doesn't matter *why* its temperature lies in the relevant range. It needn't, for example, have been prepared with Goldilocks' enjoyment in mind. It suffices that she enjoys only porridge whose temperature lies in a very narrow range and that the temperature of Baby Bear's porridge lies within that range.

In addition to the notion of fine-tuning, it will be useful also to have a notion of strong fine-tuning. Let us say that parameter P is *strongly fine-tuned* for C just in case:

(i) P is fine-tuned for C

(ii) There is no condition, C', such that P is fine-tuned for C', C' is simpler or more natural than C, and, holding fixed the values of the other parameters that are relevant to C and C', any value of P that is consistent with C' is also consistent with C.

To illustrate the distinction between fine-tuning and strong fine-tuning, consider the following two conditions:

Enjoyment: Goldilocks enjoys the porridge.

Combination: Goldilocks enjoys the porridge while wearing red suspenders and listening to Perry Como.

Now suppose that both these conditions obtain, and that the porridge temperature is fine-tuned for Enjoyment. In this case, it follows that the porridge temperature is likewise fine-tuned for Combination. For the range of porridge temperatures consistent with Combination must be at least as narrow as the range of porridge temperatures consistent with Enjoyment. And since we are assuming that Combination obtains, it follows that the porridge temperature must lie within the narrow range consistent with Combination.

It doesn't follow, however, that the porridge temperature is *strongly* fine-tuned for Combination. Whether this is so will depend on the details of the case. Let's consider both possibilities. First, consider a version of the case in which Goldilock's porridge-enjoyment is unaffected by what she is wearing, and is likewise unaffected by what she is listening to. In this version of the case, the rang of porridge temperatures consistent with Combination will be the same as the range of porridge temperatures consistent with Enjoyment. Consequently, the porridge temperature won't count as finely-tuned for Combination. For there the is another condition for which the temperature is fine-tuned, namely Enjoyment, which is simpler or more natural than Combination, and any porridge temperature that is consistent with Enjoyment is likewise consistent with Combination.

But now consider another version of the case. Suppose wearing red suspenders and listening to Perry Como each have the effect of making Goldilocks pickier about porridge temperature, and that when these factors are combined their effects are amplified. Thus, when she is both wearing red suspenders and listening to Perry Como, she will enjoy porridge only if its temperature is between 71.36 and 71.38 °C. In this case, the porridge temperature is 71.37 °C, it will count as fine-tuned for Combination. For, while there are other, more natural conditions for which the temperature of the porridge is likewise fine-tuned, none of these other conditions has the feature that any porridge temperature that is consistent with it is likewise consistent with Combination.

Having defined strong fine-tuning, I can now formulate the version of the fine-tuning thesis on which I will be focusing, namely the following:

> **Strong Fine-Tuning for Consciousness**: A large number of fundamental physical parameters (e.g., the constants that figure in the laws of physics) are strongly fine-tuned for the existence of consciousness.

This version of the fine-tuning thesis differs from, and is stronger than, some of the versions that are common in the literature. While some of these versions refer to fine-tuning for consciousness or for sentient or sapient life (see Barnes 2011 and Darg, unpublished), many make no reference to consciousness but only to life in general. And some don't refer to fine-tuning for life at all, but rather to fine-tuning for some precursor to life such as stars, planets, or carbon atoms.

Now, if there is fine-tuning for any of these other conditions (life, starts, carbon, etc.), and the condition in question is a necessary condition for consciousness, then it will follow that there is fine-tuning for consciousness—just as, if the porridge temperature is fine tuned for Enjoyment, it must likewise be fine-tuned for anything that obtains and that entails enjoyment, such as Combination. However, just as we saw that the porridge temperature could be fine-tuned for Enjoyment without being *strongly* fine-tuned for Combination, so likewise the fundamental physical parameters might be fine-tuned for life, or stars, or carbon, or what have you, without being *strongly* fine-tuned for consciousness. Whether there is strong fine-tuning for consciousness will depend on the details of the case. One way it might turn out is that consciousness is no pickier, as it were, than life (or than stars, carbon etc.). In other words, it might turn out that any values of the fundamental physical paramaters that would allow for life (or stars, carbon, etc) would likewise allow for consciousness. In this case, the fundamental physical parameters won't count as strongly fine-tuned for consciousness. Alternatively, it might turn out that consciousness is pickier than any of these simpler conditions. That is, it might turn out that there are some possible values of the fundamental physical parameters that would allow for life, stars, carbon, etc., but would not allow for the existence of the kind of living organism that possesses consciousness.[5] In this case, the fundamental physical parameters will count as strongly fine-tuned for consciousness.

I will make no attempt to resolve the question as to whether Strong Fine-Tuning for Consciousness is true. Instead, I will be concerned with the implications of this thesis for idealism.

3. From Fine-Tuning to Idealism

To derive explanatory idealism from Strong Fine-Tuning for Consciousness, we will need the right account of explanation. In what follows, I will be assuming a *unificationist* account. On the unificationist picture, explanations are inferences that increase our understanding of the world by reducing the number of facts that are treated as brute.   The basic idea of this account is expressed by Michael Friedman as follows:

> This is the essence of scientific explanation—science increases our understanding of the world by reducing the total number of independent phenomena that we have to accept as ultimate or given. A world with fewer independent phenomena is, other things equal, more comprehensible than one with more. (Friedman 1974, 15)

The most well-developed version the unificationist view is presented by Philip Kitcher (1989). On Kitcher's formulation, an *explanation* is an inference contained within the explanatory store of science. And the *explanatory store of science* is the set of sound inferences that belong to the family of inferences patterns that maximally unify our scientific knowledge. The degree to which a given family of inferences patterns counts as unifying depends on three factors. The first

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[5] Darg (unpublished) argues for this claim.

factor is *parsimony*, or how few patterns the family of inference patterns contains. The second factor is *stringency*, or the degree to which each of these inference patterns imposes tight constraints on what counts as an instance of this pattern. And the third is *strength*, or the scope of known propositions that can be inferred from other known propositions (and hence rendered non-brute) on the basis of these inference patterns. Thus, if a family of inference patterns contains only a small number of such patters, if each of these patterns is highly constrained, and if together they enable us to derive a wide range of known propositions from other known propositions, then this family will count as highly unifying. And if no other such family of inferences patterns is more unifying, then inferences belonging to this family will count as explanations.

Let us now consider a particular pattern of inference that we may call *nootropic inferences* (I name it so by analogy with *anthropic reasoning*, modified so as to emphasize that what is at issue is the existence of *consciousness* rather than the existence of *human beings*).[6] Nootropic reasoning is reasoning from the premise that consciousness exists, together with the premise that consciousness can only exist if the universe is thus-and-so, to the conclusion that the universe is thus-and-so. As an illustration, consider the following schematic inference:

(1) Consciousness exists.

(2) Since background conditions A, B, and C obtain, consciousness can exist only if the gravitational constant lies between 6.5 and 6.8×10-11 m3 kg-1 s-2.

(C) Therefore, the gravitational constant lies between 6.5 and 6.8×10-11 m3 kg-1 s-2.

Is this inference explanatory? On the unificationist picture of explanation we are considering, the answer to this question will depend on whether the most unifying family of inferences patterns includes the nootropic pattern. And this, in turn, will depend on how the inclusion of the nootropic pattern within a family of inference patterns affects the parsimony, stringency and strength of that family. Since we are only talking about a single inference pattern, and since this inference pattern is fairly tightly defined, its inclusion will not significantly reduce the parsimony or stringency of the family of inference patterns to which it is added. However, if Strong Fine-Tuning for Consciousness is true, then the inclusion of the nootropic inference pattern will significantly increase the strength of this pattern. For if Fine-Tuning For Consciousness is true, then there will be numerous physical parameters whose values can be inferred, with a high level of precision, using such inferences. Moreover, it follows from *Strong* Fine-Tuning For Consciousness that there are many such parameters whose values can be derived with greater precision on the basis of nootropic reasoning (i.e., reasoning from the existence of consciousness) than they could from any simpler basis (e.g., reasoning from the existence of life

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[6] In saying this, I don't mean to suggest that the phrases "anthropic principle" or "anthropic reasoning" were ever meant to refer to anything specifically related to human beings. I simply prefer to adopt an expression that avoids this connotation.

or stars or carbon). And so it follows that the inclusion of the nootropic inference pattern within a given family of inference patterns will greatly increase its strength, enabling us to derive a wealth of conclusions about the universe that we could not otherwise draw.

It is very plausible, therefore, that if Strong Fine-Tuning for Consciousness is true, then any family of inferences patterns that is maximally unifying, in the sense that it optimally combines parsimony, stringency and strength, will include the nootropic pattern. And so it will follow, on the unificationist account of explanation under consideration, that nootropic inferences are explanatory.

But if nootropic inferences are explanatory, then numerous facts about the fundamental physical parameters can be explained in part in terms of the existence of consciousness. Recall, however, that we defined explanatory idealism as the view that mentalistic facts play an important role in explaining a wide range of phenomena that appear, prima facie, to be mind-independent. Now, clearly, the fact that consciousness exists is a mentalistic fact. And, equally clearly, this fact plays an important role in nootropic explanation. Moreover, facts about the fundamental physical constants are paradigmatic examples of prima facie mind-independent facts. Consequently, the unificationist view of explanation we are considering seems to imply that, if Strong Fine-Tuning for Consciousness is true, then a mentalistic fact plays in important role in explaining a wide range of prima facie mind-independent facts. Or, in other words, this view of explanation seems to imply that, if Strong Fine-Tuning for Consciousness is true, then so is explanatory idealism.

4. Idealism and Observer Selection Effects

In the preceding section, I argued for the following claim:

> **Central Thesis**: If the Strong Fine Tuning for Consciousness and the unificationist account of explanation are both correct, then so is explanatory idealism.

This argument relied on the claim that the most unifying family of inference patterns includes the nootropic pattern. But one might reject this claim. For one might hold that there is an alternative inference pattern that could be substituted for the nootropic pattern and that would lead to an even more unifying family of inference patterns. The alternative pattern in question is what we may call the *observer selection inference pattern* (see Carter, 1974). In observer selection reasoning, we infer that an object observed in a given manner must have a given feature on the ground that, otherwise, it could not be observed in the manner in question. Thus, we might infer, of anything we observe by vision, that it must reflects light, since otherwise it couldn't be seen. Or we might infer, of anyone we interview by telephone, that he or she must has access to a telephone, since otherwise we couldn't interview her by telephone. Or we might infer, of any fish we catch with a given net, that it must be above a certain size, since otherwise we couldn't catch it with the net in question. The general form of this reasoning is as follows:

1. X is observed in manner M

2. In order for anything to be observed in manner M, it must have feature A.

3. Therefore, X has feature A.

One might hold that any fact about the universe that could be derived by nootropic inference could equally be derived by observer selection inference. Moreover, one might hold that the observer selection pattern allows us to infer additional conclusions that are not derivable using nootropic pattern, such as the conclusions about light reflectance, telephone access and fish size mentioned above. Hence, one might maintain that the observer selection inference pattern supersedes the nootropic inference pattern with respect to adding strength, and hence unifying power, to a family of inference patterns. Consequently, one might deny that the most unifying family of inference patterns will include the nootropic pattern.

I have two responses to this objection. The first is to point out that, even if everything stated in this objection is true, it won't help my opponent, since it won't allow my opponent to avoid my Central Thesis. Here's why not. Suppose we maintain, as the objection suggests, that the most unifying family of inference patterns includes not the nootropic pattern but rather the observer selection pattern. On this view, it will follow from the unificationist account of explanation that observer selection inferences are explanatory. Furthermore, if we suppose, as Strong Fine Tuning for Consciousness implies, that many facts about the fundamental physical constants can be derived on the basis of nootropic reasoning, and if we further suppose, as the objection under consideration insists, that observer selection reasoning can do all the work of nootropic reasoning, then it follows that many facts about the fundamental physical constants can be derived on the basis of observer selection reasoning. And so together these assumptions imply that many facts about the fundamental physical constants can be *explained* on the basis of observer selection inferences.

But recall that observer selection inferences proceed from a claim about oberservation: they proceed from the assumption that something is observed in some way or other. And this assumption is clearly mentalistic. Hence, if many facts about the fundamental physical constants can be explained by observer selection inferences, then many prima facie mind-independent facts can be explained in terms of a mentalistic fact, a fact that plays an important role in their explanation. And so explanatory idealism is true. Thus, even if we accept the claims made in the objection, the unificationist account of explanation together with Strong Fine Tuning for Consciousness will still imply explanatory idealism, and so my Central Thesis will be vindicated.

My second response to the objection raised above is this. The objection assumes that the most unifying family of inference patterns would include *not* the nootropic pattern but *instead* the observer selection pattern, and that the latter can be used to derive all the same facts about the fundamental constants as the nootropic pattern. But this position is difficult to defend. For it seems that, within any observer selection inference whereby we could derive the value of any

fundamental physical constants, a nootropic inference would be included as a component. To see why this is so, let's consider how we might use observer selection reasoning to derive a conclusion about the value of the gravitational constant. The inference might go something like this:

1. The universe is observed

2. In order for the universe to be observed, it must contain the kind of beings that are able to make observations—to wit, conscious beings.

3. Therefore, the universe contains such beings.

4. In order for the universe to contain such beings, the value of the gravitational constant must lie between x and y.

5. Therefore, the value of the gravitational constant lies between x and y.

Note, however, that steps 3 through 5 of this inference are equivalent to a nootropic inference. And so the inference above includes a nootropic inference as a component. Hence, if my opponent maintains that the most unifying family of inference patterns licenses the inference from 1 through 5, she must also grant that this family of inference patterns licenses the inference from 3 through 5, and so she must grant that this family licenses nootropic inferences. And if inferences licensed by the most unifying family of inference patterns count as explanatory, then it will follow that nootropic inferences are explanatory.

5. Why Consciousness May Be the Final Cause of the Universe

Let us suppose, for the sake of argument, that Strong Fine-Tuning for Consciousness is true. And let us further suppose that a unificationist view of explanation, along the lines sketched above, is correct. In this case, it is plausible that consciousness is the final cause of the universe.

To see why this is so, let us begin by considering the notion of a final cause. By a *final cause*, I mean something that plays the right kind of role in a teleological explanation. Teleological explanations explain causes or enabling conditions in terms of what they enable, or what they are required to bring about. Thus, in a teleological explanation, we explain the fact that x is A (or that Xs are A) in terms of the fact that x (or Xs) must be A in order to be B, or in other words, in terms of the fact that x being A is a necessary precondition for x being B. If x being A can be explained in this way, then we may say that x being B is a final cause of x being A. For example, if we can explain the fact that knives are sharp on the basis of the fact that knives' being sharp is a necessary condition for their cutting things effectively, then knives' cutting things effectively will be a final cause of their being sharp. Similarly, if we can explain the fact that hearts have chambers on the basis of the fact that hearts' having chambers is a necessary condition for their pumping blood effectively, then hearts' pumping blood effectively will be a final cause of their having chambers.

In each of these cases, there is a story to be told about how the effect explains the enabling condition, or how the fact that X must be A in order to be B explains why X is A. In the knife case, we can spell out the connection by way of the following kind of explanatory inference:

(1) Knives are created by designers who intend for them to cut things effectively and hence sees to it that they can do so.

(2) Therefore, knives can cut things effectively.

(3) In order to be able to cut things effectively, knives must be sharp.

(4) Therefore, knives are sharp.

We may call this kind of explanatory inference *design explanation*. Because it explains a proposition of the form "Xs are A" in terms of a proposition of the form "in order to be B, Xs must be A," design explanation is an instance of teleological explanation.

In the heart case, the connection is different, and can be spelled out by way of the following kind of explanatory inference:

(1) Since having a heart that pumps blood effectively promotes reproductive success, natural selection has selected for hearts that pump blood effectively.

(2) Therefore, (typical) hearts pump blood effectively.

(3) In order to pump blood effectively, hearts must have chambers.

(4) Therefore, (typical) hearts have chambers.

We may call this kind of explanatory inference *natural selection explanation*. Because it explains a proposition of the form "Xs are A" in terms of a proposition of the form "in order to be B, Xs must be A," natural selection explanation is another instance of teleological explanation.

Let us now consider the values of the fundamental physical constants. Could these be explained teleologically, and hence have a final cause? And could consciousness be this final cause? There are several conceivable ways in which this might be true. The most obvious way is that the universe might have been created by a designer who aimed to create conscious beings. In this case, the values of the physical constants would be susceptible to a design explanation of the following form:

(1) The universe was created by a designer who intended for it to contain consciousness and hence saw to it that it does.

(2) Therefore, the universe contains consciousness.

(3) In order for the universe to contain consciousness, the value of constant C must lie between x and y.

(4) Therefore, the value of C lies between x and y.

Since design explanations are teleological explanations, this is a teleological explanation of the fact that the value of C lies between x and y. And since the existence of consciousness in the universe plays the role of a final cause in this explanation, it follows that, if this explanation is sound, then the universe's containing consciousness will be a final cause of the value of C lying between x and y.

Another way in which consciousness might be the final cause of the universe involves a kind of cosmic natural selection. Suppose, for example, that the only way a given universe U can "reproduce" is for there to occur, within U, an extremely high-energy particle collision that ruptures the fabric of spacetime, resulting in a new universe with physical parameters similar to those of U. And suppose these extremely high-energy particle collisions can only occur in particle accelerators that are created by intelligent, conscious beings. If this story were true, then we could give the following explanation of the fundamental physical constants:

(1) Since the existence of conscious beings promotes the reproductive fitness of universes, cosmic natural selection has selected for universes containing consciousness.

(2) Therefore, (typical) universes contain consciousness.

(3) In order for a universe to contain consciousness, the value of constant C within this universe must lie between x and y.

(4) Therefore, (typical) universes have a value of C that lies between x and y.

This is a natural selection explanation, and hence a teleological explanation, in which the existence of consciousness figures as a final cause.

But suppose we reject both these kinds of stories. Suppose we maintain that the universe was not designed and that the universe is not the product of any kind of cosmic natural selection. Suppose we maintain, therefore, that the physical constants of the universe cannot be explained either by design or by natural selection. Does it follow that they cannot be explained teleologically, and hence that they have no final cause?

The answer is "no." For I have argued that anyone who accepts the unificatinist account of explanation, together with Strong Fine Tuning for Consciousness, should hold that nootropic inferences are explanatory. This is true, as I argued in the last section, of anyone who regards observer selection inferences as explanatory, since these inferences contain nootropic inferences. And this is likewise true of anyone who accepts the kinds of cosmic design or cosmic natural selection arguments considered above. For these arguments contain what is essentially a

nootropic inference (as steps 2-4, in both cases). And this is also true of those who reject all these stories. Even if you reject design, and you reject cosmic natural selection, and you reject cosmic observer selection effects (perhaps because you are skeptical of the existence of a multiple universes, which cosmic observer selection effects seem to require), you should still grant that, if Strong Fine Tuning for Consciousness is true, then nootropic inferences will help to unify our scientific knowledge, and will thus count as explanatory given a unificationist model of explanation. Hence, one should grant that the following inference is explanatory:

(1) Consciousness exists.

(2) The value of physical constant C must lie between x and y in order for consciousness to exist.

(3) Therefore, the value of C lies between x and y.

But in this case, we are explaining the fact that the value of C lies between *x* and *y* in terms of the fact that this is required in order for consciousness to exist. And so this is a teleological explanation in which the existence of consciousness figures as the final cause. Hence, if this argument is explanatory, then the existence of consciousness will be the final cause of facts about the fundamental parameters of the universe.

But what about the claim that the existence of consciousness is the final cause, not just of various *parameters* of the universe, but of its very *existence*? This conclusion, too, would seem to follow from the picture under consideration. For the existence of the universe, like the various facts about its fundamental parameters, can be inferred by nootropic reasoning. Indeed, the following appears to be a limiting case of a nootropic inference:

(1) Consciousness exists.

(2) In order for consciousness to exist, the universe must exist.

(3) Therefore, the universe exists.

Hence, if nootropic inferences are explanatory, then we can explain the existence of the universe in terms of the fact that its existence is a necessary condition for the existence of consciousness. Hence, we will have a teleological explanation of the existence of the universe, and the existence of consciousness will be its final cause. And so, on this picture, there is an answer to the question as to why the universe exists, and this answer points not to something outside the universe, but to something within it.[7]

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[7] For a very different view that arrives at a somewhat similar conclusion, see Leslie, 1979 and 2001.

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