

# On Some Criticisms of Hume's Principle of Proportioning Cause to Effect

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## Abstract

*That no qualities ought to be ascribed to a cause beyond what are requisite for bringing about its effect(s) is a methodological principle Hume employs to evaluate arguments from design of much theological significance. In this article I defend Hume's use of the principle against several objections brought against it by Richard Swinburne.*

In his assault on the argument from design in Part XI of the *Enquiry* ('Of a Particular Providence and of a Future State') and in the *Dialogues Concerning Natural Religion* (esp. Part V), Hume makes use of the following principle for assigning attributes to a cause on the basis of its known effect(s) (I label the principle PCE for Proportion Cause to Effect):

PCE: If the cause be known only by the effect, we never ought to ascribe to it any qualities, beyond what are precisely requisite to produce the effect.<sup>1</sup>

The relevance of PCE to the argument from design is obvious: if reflection on the features of the world does not indicate that perfect power, knowledge, and benevolence are required in order to fashion it, then an argument from design does not provide one with grounds on which to affirm the existence of a creator (or creators) with these attributes. Here is Hume's statement of the point in the *Enquiry*:

Allowing, therefore, the gods to be the authors of the existence or order of the universe; it follows, that they possess that precise degree of power, intelligence, and benevolence, which appears in their workmanship; but nothing farther can ever be

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<sup>1</sup> *Enquiries Concerning Human Understanding and Concerning the Principles of Morals*, ed. L.A. Selby-Bigge, 3rd ed. (Oxford: Clarendon Press, 1975), p.136. All page references to the *Enquiry Concerning Human Understanding* are to this edition. It is worth noting at the start that Hume's skepticism about induction and the principle of universal causation are left at the side in his critiques of natural theology – for the most part, that is (but see the discussion about induction, below). At least he nowhere in 'Particular Providence' or the *Dialogues* claims that we are not justified in assuming for any given event that it has a cause, or that like causes produce like effects.

proved, except we call in the assistance of exaggeration and flattery to supply the defects of argument and reasoning.<sup>2</sup>

Indeed, in a facetious but devastating passage in Part V of the *Dialogues*, Hume alleges that any number of hypotheses according to which the world's creator is far less than perfect will do justice to the world as we find it: it is not absurd to suppose that it is the work of an infant deity unpracticed in world-making, or the "production of old age and dotage in some superannuated deity." And, though Hume does not bring out the point fully, the implications of PCE for *a posteriori* natural theology go further: it can be used against the cosmological argument, arguments from miracles, morality, and from mystical experience. If in any case a supernatural explanation of particular facts or events is called for, we are allowed to attribute to the cause no more than what is required in order to bring about the observed effect.

Richard Swinburne has made several attempts to counter the use of PCE against *a posteriori* forms of natural theology, either by putting in question the tenability of PCE as an epistemic principle, or by appealing to considerations that might override it. In what follows I defend a slightly modified version of PCE that captures Hume's meaning and avoids the objections brought against it by Swinburne.

Before doing so it will be helpful to sort out some preliminary issues concerning the role of background knowledge in the application of the principle; one of these considerations will point to an addendum PCE requires. Consider the significance of Hume's inclusion of "only" in "If the cause be known only by the effect...." Suppose I am told about a full-grown man, Joseph, that yesterday he lifted a magazine from the floor and put it on his desk. I am told nothing more about Joseph than this. What may I assume with regard to Joseph's physical strength? Clearly it would be wrong for me to attribute to him strength enough only for magazine-lifting: full-grown men, I know, normally have more strength than what is required merely to lift up a magazine. PCE accommodates this fact by allowing that if there is information available to us about the cause beyond what we can gather merely by inspecting the effect then we might be justified in attributing to the cause more – in our example, more strength – than what is minimally required for producing the effect.

For Hume this point is of considerable importance in the natural theological context, since on his view "The deity is known to us only by his productions."<sup>3</sup> We have no background information about God, and so our only basis for ascribing attributes to him is consideration of what he has brought into existence (assuming we are prepared to allow that the universe was brought into existence by God). If somehow we knew

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<sup>2</sup> Ibid., p.137.

<sup>3</sup> Ibid., p.144.

that there are other gods to whom God bears certain relevant similarities, then we could argue analogically that probably God shares with them certain other attributes, regardless of whether they are indicated in what he has made. But no such knowledge is available to us.

What PCE does not yet account for are cases in which the background knowledge is about the effect, though clearly Hume intended that the possibility of having such information should qualify the application of PCE. He concedes, for example, that finding what looks like a human footprint in the sand justifies more than the assumption that some creature with one foot was there; in our experience such footprints normally are made by two-footed people.<sup>4</sup> Yet PCE as so far formulated would require me to suppose only that some creature with a single human-like foot, or wearing something that makes a human-like footprint, was there to make the impression. After all, the only thing we have to go on is the footprint (I have not been informed that it was made by a human, much less a two-footed one), and only one human-like foot is required for producing this effect. But information we have about this sort of effect justifies our ascribing two feet to the cause.

Since Hume meant to allow for cases like this, an addendum to PCE is called for:

PCE: If the cause be known only by the effect, we never ought to ascribe to it any qualities beyond what are precisely requisite to produce the effect, unless we have background knowledge about this sort of effect that (inductively or deductively<sup>5</sup>) justifies our doing so.

Hume tacitly makes use of this addendum in the *Dialogues* in order to make his case that even if the analogy between artifacts and nature be granted, the argument cannot justify a belief in only one designer. Granted that it is contrary to sound philosophical reasoning to multiply causes beyond necessity, he says, and granted that it seems quite possible that one deity could produce this effect, still in our experience of complex productions (like ships and houses) we find that they most often are the outcome of the combined effort of several workers. This background knowledge about effects of this sort overrides the greater ontological economy of the monotheistic scenario on Hume's view.<sup>6</sup>

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<sup>4</sup> *Enquiry*, Part XI.

<sup>5</sup> If (contrary to fact, of course) we knew that for some reason or other human-like footprints can only be made by two-footed humans then our grounds for ascribing two feet to the cause of the single footprint would be deductive.

<sup>6</sup> According to Swinburne, our background knowledge also tells us that in cases where something is produced by a cooperative effort (say, the Old Testament), one can notice telltale signs of the idiosyncrasies of the separate workers (say, the differing literary styles in OT); and we do not find any

Of course we do not even get this far if the analogy between artifacts and nature is not strong, and Hume clearly believes it is not. Even granting that it is, however, as Hume is willing to for argument's sake by the time he reaches Part V in the *Dialogues*<sup>7</sup>, still he will hold the theist to PCE: allowing that we can reason analogically to a designer for nature that resembles humans in various respects relevant to the activity of creating complex and regular things, and allowing that we must attribute these features to God in degrees beyond that to which humans have them since the production in question exceeds anything of which humans are capable, still we are allowed to increase the magnitude of these features in God's case only to the extent needed to account for this being's ability to bring about the effect.

Notice that there are cases in which not only do we not have a basis for assuming more in the cause than what is required for the effect, but we can be sure that the cause has *exactly* what is required for the effect – no more and no less. Consider again the case of Joseph. Were I to lack any background knowledge of the strength of a normal full-grown man (or humans in general), PCE would permit me to ascribe to Joseph only enough strength for lifting a magazine; but it would *not* require me positively to say about Joseph that he does not have more strength than this. Joseph might be stronger than what my information indicates – I simply don't have any grounds for assuming that he is.

But consider now Hume's example in the *Dialogues* of the weights in a balance. If the left pan is exactly balanced by some unknown something in the right pan, then not only can I be sure that this something weighs at least as much as what is in the left pan, I can be sure that it weighs no more, either; if it did, the pans would not exactly balance. I have background information (some of it involving basic physics) that requires me to attribute to the something in the right pan exactly the weight had by what is in the left pan, and deny positively that it has any more or any less weight.

This point also is germane in the theological context. If I had some reason to believe that God will choose to, or must, exert himself to the fullest in any of his acts of creation – that (as Leibniz would have it) he must always do his very best, then I would have grounds for claiming that he can do no better than this world, and so whatever power and knowledge are required for bringing this world into existence are precisely the power and knowledge God has – no more and no less. There would be

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such marks of idiosyncrasy in nature. One can answer Swinburne by putting in question whether most cases of human cooperation turn out like OT; that they normally do is not clear to me.

<sup>7</sup> Hume has Philo say "In a word, Cleanthes, a man, who follows your hypothesis, is able, perhaps, to assert, or conjecture, that the universe, sometime, arose from something like design: But beyond that position he cannot ascertain one single circumstance...." *Dialogues Concerning Natural Religion*, ed. Norman Kemp Smith (New York: Library of Liberal Arts), pp.168-9. All subsequent page references to the *Dialogues* are to this work.

no possibility of claiming that God can create better worlds, and that he merely chose for some reason or other to create one that did not require the fullest exertion of his abilities.

But since Hume believes that we have no information about God apart from what we can get by considering what he has made, we cannot on his view affirm that God always exerts himself fully in creating worlds. Hence despite his potentially misleading phrasing – “[the gods] possess that precise degree of power, intelligence, and benevolence, which appears in their workmanship” – we must assume that for Hume the apparent imperfections of the world are not by themselves a proof of God’s imperfection.<sup>8</sup>

## First Objection

In the course of defending a version of the design argument, Richard Swinburne says of PCE that

[T]he principle is clearly false on our normal understanding of what are the criteria of inference about empirical matters. For the universal adoption of this celebrated principle would lead to the abandonment of science. Any scientist who told us only that the cause of E had E-producing characteristics would not add an iota to our knowledge. Explanation of matters of fact consists in postulating on reasonable grounds that the cause of an effect has certain characteristics other than those sufficient to produce the effect.<sup>9</sup>

In a statement preceding the quoted passage, Swinburne concedes that the design argument by itself does not show the existence of a creator who is omnipotent, omniscient, and omnibenevolent. He does not say why he makes this concession; I suspect that he concedes the point because he accepts a principle akin to PCE. Since Swinburne concedes certain limitations on the design argument’s conclusion, and since he does so presumably because he accepts something close to PCE, it might seem unnecessary to dwell much on an objection that seems more directed at Hume’s own rather simplistic formulation of the general idea behind PCE. But considering this objection will enable us to remove some more crucial ambiguities in PCE itself and from Hume’s use of it against *a posteriori* forms of natural theology.

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<sup>8</sup> Hume explicitly admits as much at various places in his discussion of natural evil in Parts X-XI of the *Dialogues*.

<sup>9</sup> Richard Swinburne, ‘The Argument from Design’, *Philosophy*, vol.43 (1968), p.207. Swinburne’s version of the design argument appeals to what he calls ‘regularities of succession’ – those regular laws of nature that permit the emergence of “regularities of copresence,” such as complex biological organisms. Thus he obviates the Darwinian objection to the more traditional formulation of the argument, while preserving its analogical character.

What makes the form that Hume's PCE (as Swinburne interprets it) would impose on characterizations of causes unacceptable is primarily that it would undermine science. Swinburne unfortunately does not in this context offer a concrete example drawn from science; let us use for our own example a planet's acceleration of an approaching asteroid. Swinburne can be thought of as asking the following question: What is *precisely requisite* (Hume's words) for accelerating an asteroid? Swinburne's answer: asteroid-accelerating power. Indeed, to put a finer point on it, suppose that the asteroid is 3 miles in diameter. Then, according to Swinburne, all that PCE allows us to say of the planet is that it has 3-mile-wide-asteroid-accelerating power, which is not terribly informative, and certainly not something we can use to explain or predict the planet's acceleration of other objects. (The inclusion of a spatiotemporal reference in our description of the event would make the point even more acute: the planet only needs the power to accelerate 3-mile-wide asteroids on the last Tuesday of May 1990 in a certain region of the Milky Way.)

Admittedly there is room for confusion created by Hume's phrase "precisely requisite to produce" in PCE.<sup>10</sup> If we understand him to mean that no explanation for an event *e* can go beyond literally attributing "*e*-producing power" to the event's cause then of course PCE must undermine any attempts to explain or predict other phenomena aside from *e*, or to explain *e* itself in any informative manner; all of which would be detrimental in an obvious way to the scientific enterprise as we normally understand it. But, just as clearly, Hume was not suggesting anything so extreme. In the *Dialogues* Hume rehearses the classic example of someone's absurdly trying to explain how a soporific induces sleep by referring to its "dormative power", and so it is reasonable to assume that Hume meant for PCE to allow for legitimate characterizations of causes that go beyond the above (*e*-producing power) form. He meant to permit us to give some explication of what "*e*-producing power" involves.

So what is needed in order to uphold Hume's view is an interpretation of PCE that at once avoids undermining science, while still denying to the design argument a theologically serviceable conclusion. What seems needed is that we interpret PCE in terms of explanatory adequacy: the principle requires that we not attribute more to a cause than what is needed in order adequately to explain how it was able to produce the effect, unless we have independent information that justifies our doing so. Why will Hume not permit theists to attribute to God omnipotence and omniscience, despite the superior complexity of the effect in this case? Because doing so is not required in order to explain how God was able to create this world, and because we have no independent knowledge about God.

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<sup>10</sup> In another statement of PCE in Particular Providence Hume uses the phrase 'exactly sufficient to produce,' which is not less ambiguous.

Of course what are the desiderata of any “adequate” characterization of an event’s cause is one of philosophy of science’s core problems. I won’t offer any complete set of necessary or sufficient conditions for explanatory adequacy, but what makes most of us reject on grounds of adequacy the explanation of the asteroid’s acceleration in terms merely of the planet’s “asteroid-accelerating power” seems to be one or both of the following:

- (a) the explanation does not illuminate for us any of the causal mechanisms that underlie asteroid-accelerating power;
- (b) the explanation cannot in principle be extended to explain or predict (or retrodict) the planet’s acceleration of other objects, or of the same object at some other time or place.

In contexts where we lack a compelling reason to believe that the event in question is causeless, we tend to expect that any adequate explanation of the event will throw light on certain causal mechanisms by which the event occurred. The acceleration of the asteroid seems to us a case in which we need to provide some causal story about what is involved in the exertion of asteroid-accelerating power, perhaps by referring to the planet’s bending of spacetime, or its emission of force-carrying particles.<sup>11</sup> As I pointed out above, Hume clearly meant to allow for these more informative characterizations of the cause, doubtless because he believed that informativeness is one necessary condition for adequately explaining how a cause is able to bring about an effect.

But the problem of specificity pointed to by (b) remains, and other of Hume’s remarks in ‘Particular Providence’ very clearly invite the complaint. When background knowledge is absent, Hume interprets PCE quite strictly. In the absence of independent information, Hume will not countenance ascribing to a cause any more than what is strictly required adequately to explain how it was able to produce the particular effect we observe; the power to bring about any “new” sorts of effects – or even the same type in a different part of space and time – cannot be inferred from its observed effects.

To say, that the new effects proceed only from a continuation of the same energy, which is already known from the first effects, will not remove the difficulty. For even granting this to be the case..., the very continuation and exertion of a like energy (for it is impossible it can be absolutely the same)...in a different period of space and time,

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<sup>11</sup> Methodological criteria in addition to PCE would be required in order to decide between competing characterizations of the underlying causal mechanisms. Also it is worth mentioning that PCE seems compatible with an instrumentalist view about theoretical entities; it can be thought of as placing a restriction on the useful fictions to which we refer in characterizing causes.

is a very arbitrary supposition, and what there cannot possibly be any traces of in the effects, from which all our knowledge of the cause is originally derived.<sup>12</sup>

In order to produce the observed acceleration in our example, is it required that the planet be able to bend spacetime on other days or at other places in its orbit about the galactic center, or in such a way as to accelerate other objects? If it is not, and if we adhere strictly to PCE, then our explanation for the asteroid's acceleration, despite being more informative than a mere reference to asteroid-accelerating power would be, will be useless as a tool of predictive science, and any hopes of explanatory unification will be dashed also.<sup>13</sup> What Swinburne will say against my defense of PCE thus far is that even granting what has been said already, PCE will permit no characterization of the planet that involves ascribing to it more than the following: the planet was able to accelerate the asteroid by having the power to bend spacetime on this day, in this part of the universe, in such a way as to affect the velocity of this three-mile-wide asteroid. This sort of explanation does not license any predictions or retrodictions, since it refers to a specific spatio-temporal location. And it will not enable us to explain why the planet was able to accelerate my pencil to the ground a moment ago (let us assume we are talking about Earth), since my pencil is not a three-mile-wide asteroid. And yet the powers mentioned in the above explanation seem to be all that we are strictly required to attribute to the planet in order to explain how it could accelerate this asteroid when and where it did.

One thing to note here is that what PCE – as I have interpreted it thus far – requires is that we attribute no more to the cause than what is required adequately to explain how it produced its known effect or effects. The Earth has been observed to accelerate objects other than asteroids and to accelerate other asteroids at different times and places. What is required adequately to explain the totality of these of the Earth's effects? If adequacy is understood to entail at least the possibility of explanatory unification, then to explain each acceleration in terms that rule out the possibility of unification will fail the adequacy test, and PCE will permit something broader in scope, such as a characterization of asteroid-accelerating power that entails for Earth the ability to accelerate all those things having mass. And with explanatory scope will come predictive power.<sup>14, 15</sup> To this extent we are forced to part company

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<sup>12</sup> *Enquiry*, p.145, note1.

<sup>13</sup> Of course we are entitled to predict the planet's acceleration of other objects if we analyze its asteroid-accelerating power in general enough terms – say, as the power to bend spacetime so as to affect the velocity of *any* object that comes near enough to it. But the question is whether PCE will countenance any such general characterization of the planet's asteroid-accelerating power.

<sup>14</sup> This is not of course to say that explanatory power and predictive power always increase commensurately — there are well-known counter-examples to that thesis.

<sup>15</sup> We need not make the implausible assumption that every scientific explanation must be of a sort that mentions general laws – not every scientific question is even a “why-question” or a “how-question.”



with Hume's far more strict interpretation of the correct use of PCE, where his skepticism about induction (or abduction) rears its head.

Clearly I have not proven that Hume was wrong in being skeptical about induction, and the mere fact that we desire unifying explanations hardly shows that in fact such explanations are the best ones available, in the sense of being the ones most likely to be true. But to justify the criteria of explanatory adequacy to which most of us subscribe is not part of my project here; rather, I want to see what are the implications these assumptions carry for the use of PCE in the natural theological context.

So let us now consider what, if anything, the natural theologian stands to gain from certain of the features that our asteroid-acceleration explanation will have, given the interpretation of PCE I have outlined and the assumption that (a) and (b), above, are legitimately regarded as desiderata for explanatory adequacy. The following will be true in the asteroid case:

- (1) We are allowed to suggest some picture of the causal mechanisms involved in the exercise of asteroid-accelerating power;
- (2) We are allowed to posit that the same causal mechanisms are at work in distinct cases of acceleration, and to attribute to the planet any features necessary to bring about the full range of these effects (but no more, in the absence of any other information);<sup>16</sup>
- (3) We are allowed to posit that the planet can bring about effects qualitatively and quantitatively different from those we have observed it to bring about (it can accelerate #3 pencils in addition to #2 pencils, and it can accelerate asteroids twice as heavy as the heaviest asteroid we have observed it to accelerate).

I take it that what theists would like is to be able to attribute to the world's creator more than what Hume would attribute to his divine toddler. Nothing in (1) would permit a theist to do so; it would only permit that they give some characterization of the toddler's power more informative than "world-creating power."<sup>17</sup> (2) holds out

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But the asteroid case is surely one or the other of these two, and for questions of these sorts we in most cases do expect there to be included a reference to some regularity to which we can appeal in explaining relevantly similar phenomena. Cf. Philip Kitcher, 'Explanatory Unification,' *Philosophy of Science*, 48 (1981), pp.507-531.

<sup>16</sup> I need not, for example, ascribe to Earth any particular surface temperature or chemical composition, in order to explain how it could achieve the acceleration in question, though I might need to in order to explain other of its effects different in type.

<sup>17</sup> That characterizations this informative typically are not forthcoming is something Darwin's defenders often refer to when it is claimed by creationists that their theory of the origin of life can compete with Darwinism: Darwinists don't have anything like a complete story yet, but they claim that

more promise for the natural theologian because it compels us to recognize that we should attribute to God the ability to bring about the full range of his observed effects, if we have reason to suspect that he is involved not just in designing the world but in, say, causing people to have certain mystical experiences. Hume's principle concern is what we can attribute to God by considering a particular effect: the world's splendor and also its many seeming imperfections. If there are grounds on which to suspect that this being also brings about other effects, and that doing so requires him to have attributes in addition to those required for fashioning the world, then some progress might be made toward being able to affirm that this being is more exalted than the lame deities Hume mentions. Whether and to what extent this progress can be made can only be determined on a case-by-case basis, but a cursory inspection of other forms of *a posteriori* natural theology such as the cosmological argument and arguments from religious experience does not reveal that we will be compelled to regard the common cause in each case (if it is common to each case) as one much more exalted than Hume's pathetic gods. (Obviously much turns here on our ability to determine just what a being really has to be like in order to bring about the effects we observe; I shall return to this issue in the concluding section.)

Natural theologians must be careful to guard against seeing in (3) a way of ascribing to God more power, knowledge, etc. than is evidenced in what we observe in the world. We attribute to Earth the ability to accelerate even more massive objects than we have observed it to accelerate because (within a certain range) we have observed that the amount of mass an object has is not relevant to whether Earth can accelerate it. We have *not* observed that the perfection-level of a world is irrelevant to whether God can create it, and so we cannot argue based on (3) that God should be assigned power and knowledge enough to create better worlds (if better worlds are possible).

But perhaps this is too swift a treatment of (3). Recall again the point about (2): perhaps one can be justified in attributing multiple effects, each requiring varying amounts of power, to God.<sup>18</sup> In this case, is it not true that we observe the irrelevance of the degree of power required for whether God can bring about an effect? To claim that in this case we have observed the irrelevance of the power required only within a certain range will not help us, since the same is true in the asteroid case: we have observed the irrelevance of mass-amount to whether the planet can produce an

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creationists have not so much as hinted at how they might investigate the details of the causal pathways stretching from living things to God's acts of will. Even if such details are not required in order to evaluate a theory of the origin of life, their presence or absence is surely relevant to a comparative evaluation of a theory that gives these details (or explains how they might be gathered) with one that does neither.

<sup>18</sup> Suppose we have good reason to believe that the same being who created the universe also parted the Red Sea for Moses: The former would seem to require more power than the latter, though it is obviously difficult to be sure just how much more.

acceleration only within a certain range of mass. And to say that we are allowed to assume the general irrelevance of mass because the causal mechanisms we posit to explain a given acceleration do not make any reference to mass when it comes to whether Earth can produce any acceleration at all, only pushes the question back a step: Why are we allowed to give a characterization of the causal mechanism that has this feature in the asteroid case, if we are not allowed to do the same in the theological case, assuming one can tell a causal story in this case? What the objection comes down to is the claim that there are no grounds for holding both of the following two theses:

- (1) In order adequately to explain the totality of Earth's known acceleration effects, we must assume that the amount of mass is irrelevant to whether Earth can accelerate an object;
- (2) In order adequately to explain the totality of God's known effects, we are *not* required to assume that the power required to produce the effect is irrelevant to whether God can produce it (and hence that God can produce effects requiring more power than any we have observed him to produce).

As I have emphasized already, much turns here on the legitimacy or illegitimacy of ascribing multiple different effects to God, but let us see what follows if we ignore this issue. What justifies our accepting both (1) and (2)?

When I discussed the apparent inadequacy of an explanation of the asteroid's acceleration merely in terms of Earth's "asteroid-accelerating power," I mentioned what we normally take to be two of the desiderata of explanatory adequacy: a reference to underlying causal mechanisms, and broad explanatory and predictive power. There is another desideratum: fit with background knowledge. For example, we will not look favorably upon any action-at-a-distance explanation of the asteroid's acceleration if we are convinced on some grounds that such phenomena do not occur in nature.

Nothing in our background knowledge is inimical to the assumption that the amount of mass an object has is irrelevant to whether Earth can produce some acceleration of it (at least, so long as the mass is finite), and the assumption that it is not conduces to greater predictive power for our explanation. But one thing we know about every mundane case of agent causation we have seen is that there is an upper limit to what the agent can accomplish, even if within a certain range the amount of power or skill required is irrelevant to whether the agent can bring about the effect (consider a human's ability to lift objects). To assume that for God the amount of power required to produce an effect is irrelevant to whether he can produce it would be to ignore our experience of agent causation, and so unless we have independent information about

God that justifies ignoring this experience (see below), we are required to assume that God fits the general pattern.<sup>19</sup>

So it appears that we can interpret PCE in a way that does not undermine the scientific enterprise, while upholding Hume's pessimistic estimation of the implications PCE has for *a posteriori* natural theology.

To conclude this section, note that what we have so far considered is what PCE entails for analogical design arguments, in which case (if the analogy is strong) we have independent information about the effect that justifies our ascribing more to God (such as freedom of the will, if we find this to characterize human designers and to be relevant to their designing activities) than what seems minimally required for producing the effect. If a theist abandons the analogy and proceeds entirely on abductive grounds – arguing that God is the best explanation for why this world is as it is, without claiming that the world resembles a human artifact<sup>20</sup> – then, as Hume makes vivid, PCE has severe implications for what can be shown: the world could have been created, for all we can tell, by a being who is not free, or even conscious. Perhaps some of these attributes can be gained by again appealing to the totality of the effects that seem to require supernatural explanation. That remains to be seen, pending more work on the phenomena considered individually.

## Second Objection

In his *The Existence of God*, Swinburne endeavors to show the virtue of theism as an explanatory hypothesis accounting for a number of disparate phenomena, including the existence of this universe, the regularity of its laws, the existence of conscious beings, and others. He proposes that the best (most probable) explanation of all these things is the theistic one that “there exists a person [‘God’] without a body (i.e. a spirit) who is eternal, is perfectly free, omnipotent, omniscient, perfectly good, and the creator of all things.”<sup>21</sup>

Two crucial theses Swinburne advances are the following:

- (1) All else being equal, simpler hypotheses are more probable than less simple ones.

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<sup>19</sup> This is not to say that the criteria of predictive and explanatory power never can supersede the criterion of fit with background knowledge: if it could not, then it would be difficult to make any progress in science. But what great gains will be made if we ignore our background knowledge in the theological case?

<sup>20</sup> Of course, if the world does not resemble an artifact then it is less clear what would recommend an explanation in terms of divine agency.

<sup>21</sup> *The Existence of God* (Oxford: Clarendon Press, 1979), p.8.

- (2) Theism is simpler than any alternative explanation according to which God has only finite power, knowledge, etc.

Swinburne can accede to PCE, and claim that (1) and (2) are pieces of independent knowledge we have that entitle us to attribute more power and knowledge to God than what seem minimally required for bringing about the totality of his observed effects. Hence we can think of Swinburne as taking issue here not with PCE directly, but with the pessimistic conclusions Hume sees it as having for natural theology. For convenience I shall confine myself to the question of how much power we ought to attribute to God, and I shall assume that omnipotence is not strictly required in order to bring about the totality of the phenomena Swinburne mentions. So let T henceforth refer to the following hypothesis:

T: The person responsible for the observed effects is omnipotent.

And let L be:

L: The person responsible for the observed effects has some power, but is less than omnipotent.<sup>22</sup>

Despite the ubiquity in *Existence* of Swinburne's appeals to the superior simplicity of T, pinning down just what "simple" means for him is not easy. Since simplicity comes in various types, and since it might turn out that some, but not all types are known to be truth-indicative, getting straight on just what sort of simplicity T enjoys more than L is crucial.

Swinburne uses "infinite power" interchangeably with "omnipotent," though he believes that there are logical limits on what God can do. I am uncomfortable with this rather arbitrary use of the term "infinite," especially since part of Swinburne's argument for the superior simplicity of T is based on features of infinity *qua* number. The numeric value of a quantity can depend on what arbitrarily-chosen unit of measurement we select, in which case appeals to the simplicity of the number itself in order to argue for the superior probability of the hypothesis in which it appears are useless. And this is just what Swinburne does: he claims that infinity, *qua* number, is simpler than any finite number, and so T is *prima facie* more probable than L.

There is...a neatness about zero and infinity which particular finite numbers lack.<sup>23</sup>

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<sup>22</sup> Of course, that there is a *person* responsible for these effects is itself something that needs argument, and PCE will be germane to that argument's evaluation. I am considering what we can be said if we grant this point to Swinburne.

<sup>23</sup> *Existence of God*, p.94.

And he earlier offered an example of truth-indicative neatness of the numbers in a theory:

The relationship [between gravitational force and distance in Newtonian mechanics] is simple because the distance is not raised to a complicated power (e.g. we do not have  $r^{2.0003}$  or  $r^{\log m}$ )....<sup>24</sup>

Perhaps what Swinburne means is one of the following three things:

(A) Once a unit of measurement has been established (arbitrarily), a theory that assigns to the quantities it mentions simple numbers (such as infinity, or zero, or whole numbers) is more likely to be true (*ceteris paribus*) than one involving less simple numbers (such as 2.003, or finite numbers instead of infinity). But it is difficult to see why anyone would believe this. One does well to bear in mind here that scientists often round off numbers in texts and in their professional communications in order to make calculations easier; the vacuum speed of light, for example, is not exactly 300,000 km/h, but 299,792.8 km/h. Certainly we have no empirical evidence that *infinite* values in a theory are marks of truth; physicists usually try to eliminate them when they crop up. Granted that in the theological case we are not dealing with a physical quantity such as mass or speed, but then we still are left to wonder what non-pragmatic reason we have to favor theories with infinite quantities, assuming it is even possible to make sense of the claim that infinity, *qua* number, is simpler than any finite number such as 3.

(B) A theory that assigns simple numbers to those quantities that are not measured in units (such as that the gravitational attraction between bodies is proportional to the inverse *square* (exponent 2) of the separation; or the *ratio* of the mass of the electron to that of the proton) is *prima facie* more probable than one that does not. Again I don't see much reason to believe this, but worse is that it has no clear applicability to the case of a being's power: is this supposed to be a quantity that does not require the establishment of some unit of measurement (say, state of affairs actualizable by the being, or types of states of affairs) in order to assign a number value (infinity in this case) to it?

(C) At places Swinburne speaks of simplicity in terms of the degree to which something "cries out" for explanation: "A finite limitation cries out for an explanation of why there is just that particular limit, in a way that limitlessness does not."<sup>25</sup> If God's power were only finite, says Swinburne, then we would be left to wonder why it has just that limit. Basically, then, simplicity is here understood as the degree to

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<sup>24</sup> Ibid., p.53.

<sup>25</sup> *Existence of God*, p.94.

which a view leaves loose ends – simpler views leave fewer of them, and T leaves fewer loose ends than L. Unfortunately, I am unclear as to just why we should regard the claim that God has finite power as a loose end in need of further explanation, and the claim that God has infinite power as a “natural” stopping point for explanation. Is it a fact of our experience that “complicated” numbers usually are not stopping-points for explanation, though simple ones are?

I can imagine only one way to try and make this sort of argument work. Perhaps the claim could be advanced that we should assume God’s power infinite – no matter whether it is displayed fully in creation – because there could not be anything other than logic to place restrictions on God’s power. Physical laws account for many of the restrictions on the powers of humans, but if God creates these without himself being subject to them, then they could not limit his power. So if God’s power were to have limits other than logic, there could be no explanation for why it is so limited.

Could it be a brute fact that God’s power is restricted to less than what logic permits? If we believe there can be brute facts then probably we will not get far enough with many of Swinburne’s arguments that the issue of the power of the person who causes the phenomena in question will even arise. If we do grant that we should ignore the brute-fact idea then what could explain any non-logical limits on God’s power? Perhaps there are metaphysical limits on it – say, God cannot actualize a world in which I am a salamander (if this is metaphysically impossible). I am partial to the view that there could be a being whose power has non-logical constraints as a matter of contingent and brute fact, and I do not see at all that this would leave us with anything that cries out for explanation more than the idea that there exists a being whose power is limited only by logic – especially if (as Swinburne concedes) God’s own existence is upheld as an example of something logically contingent, but not needing further explanation.

Let us keep in mind here also the point I made at the beginning of this section: none of this is inimical to PCE itself. What has been considered is whether we have the sort of independent information that PCE mentions that would entitle us to ascribe more to the cause in this case than what seems minimally required for producing the effect. PCE remains intact as a methodological principle to which the natural theologian should be held.

## **Conclusion**

It is worth keeping in mind that PCE deprives the design argument of much theological significance only if it is reasonable to believe that attributes beyond those had by Hume’s superannuated deity or infant deity are not required for creating the

world. Can we be at all certain, though, that this world in fact does not show all the signs of having been produced by a perfect or very exalted being (beyond Hume's lame deities)? After all, Hume himself makes an analogy between our appraisal of the degree of perfection of this world, and an illiterate peasant's estimation of the literary quality of Virgil's *Aeneid*.

Though we cannot entirely<sup>26</sup> rule out that this might be the sort of world that a perfect or very exalted being, exerting itself to the utmost, would create, neither do we have any reason to suppose that it *is*, and our ignorance here favors Hume's position. Recall the point of Hume's use of the problem of (primarily natural) evil in Parts X-XI in the *Dialogues*: he concedes that the world's ills *might* be necessary for getting something a perfect being would want, but the natural theologian's task is to *prove* that this world is the creation of a perfect being, as opposed merely to showing the logical consistency of the idea.<sup>27</sup>

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<sup>26</sup> Some would argue that we cannot even assert it to be probable that this world is less good than what a perfect being would create. For both defense and criticism of this view see the articles in Daniel Howard-Snyder (ed.), *The Evidential Argument from Evil* (Indianapolis: Indiana University Press, 1996).

<sup>27</sup> For his comments on an earlier version of this paper I am indebted to Evan Fales.