Why Hume and Kant were mistaken
in rejecting natural theology[1]

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Natural theology in the sense of arguments from evident features of the natural world to the existence and nature of God has been part of the Christian intellectual tradition for most of its life, and it has roots both in the Old Testament and in Greek philosophy.[2] Not that any of the Christian Fathers, scholastics, and later theologians thought that everyone needed natural theology; but they thought that it was available for any who doubted the existence of God and were capable of understanding the arguments. But this whole tradition became discredited among philosophers as a result of the similar arguments put forward by Hume and Kant about the bounds to what humans could understand and know. Kant's arguments have had an enormous influence for the past two centuries on the thinking of philosophers on the continent of Europe, and (via these philosophers on theologians in English speaking countries as well as on the continent of Europe). Hume's arguments had their greatest influence on the thinking of English speaking philosophers; and the latter influence was at its strongest in the middle years of the twentieth century. I claim that the arguments of both philosophers about the limits to human understanding and knowledge are totally unsound, and there is good reason for natural theology to resume its proper place in the Christian and - more generally - the philosophical tradition.

Hume's very general principle of the bounds of intelligibility is that all our 'ideas' are compounded of simple ideas, and that all simple ideas are derived from 'impressions'.[3] By 'impressions' he means 'all our more lively perceptions [i.e. conscious events] when we hear, or see, or feel, or love, or hate, or desire, or will'; while by 'ideas' he means 'the less lively perceptions, of which we are conscious, when we reflect on any of those sensations or perceptions above mentioned.[4] The ideas produced by impressions can be analysed as composed of 'simple' ideas. We can combine our simple ideas in various ways so as to form complex ideas of things of which we do not have any impression. Thus, to use Hume's example, having had impressi-

ons of gold and of a mountain, we can have ideas of gold and of a mountain and then combine them to form the idea of a golden mountain, of which we have not had any impression. But - Hume claims - none of us can have any ideas except ones composed of simple ideas ultimately derived from our own impressions. And since, he assumes, humans have impressions only of certain sensible kinds, we can have ideas only of certain kinds. So 'when we entertain ... any suspicion that a philosophical term is employed without any meaning or idea (as is but too frequent), we need but enquire *from what impression is that supposed idea derived.*'; and if no such impression can be produced, that would 'confirm our suspicion' that the term is being employed 'without any meaning or idea', that is is meaningless[5]. Hence, Hume claimed, what we can think is 'confined within very narrow limits'.[6]

Hume had a very crude understanding of the nature of thought. It does indeed involve operating with ideas, normally (and especially in the modern world, since Kant) called 'concepts'; but concepts are not faint images of perceptions, understood as the conscious events which occur in us when we perceive. Sometimes using a concept of x may be accompanied by having a faint image of x. But that is never sufficient, and seldom (perhaps never) necessary. Thinking that inflation is increasing doesn't involve having a faint image of inflation; and if one did have a faint image accompanying the thought (e.g. of shopkeepers putting larger numbers on the labels of their goods), that could be an image of many things other than inflation (e.g. the numbers could be the new numbers of the goods in some catalogue). But despite his crude theory of thinking, Hume may have been correct in the general point he was trying to make, that – as a contingent fact[7]- we think only by means of concepts derived (in some sense) from our experience of their application to (the internal or external) world . As the medievals put it, *nil in intellectu quod non prius in sensu*. But there are two crucial problems with this slogan. One is (to phrase the point in Hume's terms) that our 'impressions' can give rise to many different 'ideas', some of them applicable only to substances and properties very similar in almost all respects to those which caused the original impression, and other ideas which can be applied to substances and properties very different from those in many respects. Suppose Hume has impressions of what are in fact eighteenth- century European humans. These impressions can give rise to an idea applicable to and only to eighteenth-century European humans. But they could also give rise to an idea applicable to and only to humans of any time and culture, and also to an idea applicable to and only to persons (i.e. any rational beings, including for example Martians). This problem is – how general are the ideas which we can form from our experience of the world? The other problem is: in what ways is it permissible to combine ideas so as to form other ideas? Can we combine the idea of a person with the idea of a

part, and the idea of *not* having something,[8] and the idea of a material object, so as to give rise to the idea of a person who does not have any material object as a part (i.e. is non-embodied). And could we go further by combining this latter idea with the ideas of power, action, goodness, knowledge, belief, and the idea of a true sentence (all of which ideas are derivable from impressions), to get the idea of a non-embodied person who has the power to do every good action, no power to do an action which is not good, knows all true sentences, and does not believe any sentences which are not true? If so, we are well on the way to having an idea of God. Hume did not face up to these problems. But whether 'what we can think is confined within very narrow limits' depends on the solutions to them.

Hume's concern with intelligibility is a concern about which words expressing which concepts can be combined in such a way as to form a sentence which expresses a logically possible proposition, one which we may call in an objective sense conceivable. A logically possible proposition is one which does not entail a contradiction. As any given proposition entails an infinite number of propositions, we cannot show that it is logically possible by inspecting them all and not finding a contradiction among them. Rather, to show that some proposition is really logically possible (or, as the case may be, impossible) we depend on the assumption that a proposition which is apparently logically possible (or impossible), probably is really logically possible (or impossible, as the case may be). If intuitions clash, that is if it is disputed whether or not some proposition p is logically possible, the way forward is to try to show either that p *does* entail a contradiction *or* that some other proposition q is logically possible and that q entails p. For if q is logically possible, so is any proposition which is entailed by q. One proposition x entails another one y iff (x and not $-y$) is logically impossible; and so the resolution of these disputes requires further intuitions about logical impossibility; which again depend for their justification on the apparently logically possible (or impossible) being good evidence of the really logically possible (or impossible). If one disputant cannot get the other disputant to agree straight away with his claim that some proposition x entails another one y, he may be able to get him to agree that x entails s, s entails t, and so on until we reach y; since entailment is transitive, that would prove that x entails y. But in all these ways we can only prove a disputed proposition to be logically possible or impossible on the basis of agreement about some other propositions that they are logically possible or impossible. There is no easy maxim (such as Hume, or –later- the logical positivists[9], thought that they could provide) which will enable us to determine whether some proposition is logically possible or impossible. Only by the methods I have described can we determine by a deductive argument[10] whether it is logi-

cally possible that there be more than one space or time, or an effect can precede its cause, or an event can occur without a cause, or whatever; and so only in this way (to put the point in Hume's terms) can we determine the limits to how general are the 'ideas' we can derive from impressions, and to the ways in which we can combine simple ideas to form complex ones.

Hume claimed that we derive our idea of 'cause' from impressions of 'constant conjunction', that is regular succession . And he claimed on the basis of the principle discussed above that since our idea of x causing y was formed by impressions of 'objects' (that is, events) like x being regularly followed by objects like y, our concept of cause was therefore itself a concept of regular succession[11]; that is, to say that an event x causes an event y entails that for some A and B, x is A, y is B and that all (or perhaps just most) A's are followed by B's. It is then natural to suppose that the only way we can learn about the cause of a new effect y which is a B is by finding that it is preceded by some event x which is an A such that – in our experience - all A's are followed by B's and no B's are not preceded by A's; from which we can conclude that x is the cause of y[12]. So, when discussing the suggestion that the universe was caused to exist by God, Hume argues:

'When two species of objects have always been observed to be

conjoined together, I can infer by custom the existence of one whenever I see the existence of the other, and this I call an argument from experience. But how this argument can have place where the objects as in the present case [i.e. when God is supposed to cause the universe], are single, individual, without parallel or specific resemblance, may be difficult to explain.[13]

It would seem to follow that we would have to have observed many acts of will of many gods being followed by the existence of universes before we could conclude that our God caused our universe. So even if it were intelligible to suppose that God could cause the universe, it follows that we could have no knowledge that he did.

Now given my earlier point, it does not follow that even if the concept of cause is a concept of regular succession, it cannot be meaningfully applied to regular successions of unobservable events. For we could desire from impressions of regular successions of events not merely the idea of one observable event causing another such event, but the more general idea of one event (whether observable or unobservable) causing another event. So we can certainly speculate about states of atoms causing other states of atoms, even if we cannot learn much about causation at the atomic scale. But if the concept of causation is a concept of regular succession, it is plausible to suppose that it is meaningless even to speculate about single causes, causes which caused effects even though no similar objects cau-

ses similar effects.

Hume was however, I suggest, mistaken in supposing that our impressions of regular succession are the only or even the main impressions from which we derive our idea of causation. For we experience ourselves causing effects. A basic action is an action which an agent does intentionally, but does not do by doing anything else intentionally. Me making a simple bodily movement, such as me moving my hand, is normally a basic action – I just do it, do not do it by doing anything else. (Although of course certain neural events have to happen in order for me to move my hand, I do not intentionally bring these about.) In doing such actions as moving a hand intentionally I seem to be aware of myself as causing an effect (the motion of my hand). And if things are as they seem to be, most basic actions consist in causing (independently identifiable) effects. But there are basic actions which – if things are as they seem to be - do not consist in causing an effect; some actions of trying to bring about some bodily movement are basic actions- for example my trying to move my hand if it is tied down by a rope, or my trying to lift a heavy weight, are basic actions, even if the effect which I seek to cause does not occur. And what is it for me to try to move my hand? It is to do whatever it seems to me will make it causally more likely that my hand will move. There is no separate event which I perform and which I can describe in some other way than as 'doing what it seems to me will make it causally more likely that my hand will move'. In such trying I seem to be aware of myself as exerting causal influence such that if I exerted enough of it, and external circumstances permitted (e.g if the rope would snap under the amount of force I could exert) I would cause the intended effect. So both in performing easy basic actions and in trying to perform difficult basic actions, I seem to be aware of myself as exerting causal influence. And since it is surely probable that things are as they seem to be (that is, as we find ourselves inclined to believe that they are) in the absence of counter-evidence (a general principle which in effect I have already used in discussing logical possibility) it is probable that I am exerting causal influence when I perform an easy basic action or try to perform a difficult one.

Without this general principle, which I call the Principle of Credulity, that it is probable that things are as they seem to be, we could have no knowledge of the external world, let alone knowledge from memory of which past events were succeeded by which other events, knowledge which Hume supposes that we have in his discussion of causation. We thus derive our idea of cause from the impression of ourselves exerting successful causal influence, that is causing. We could not discover that we cause the motion of a hand from observing a regular succession, because there is no earlier event which we could discover to have been normally followed by the motion of a hand (except in some cases, the event of trying to move the hand,

which –if it succeeds - we must already believe to be an event of causing). We could of course occasionally discover that we were subject to an illusion in believing that we were moving our hand; but discovering the illusion would consist in discovering that something which we already understood as a causal relation really was not one. We must already have beliefs that we cause movements before we could discover that sometimes we don't.[14]

Having acquired the notion of causation from finding that we can cause bodily movements, we may then find that we can cause a event of kind B (e.g a window being broken) by causing an event of kind A (e.g. a brick being propelled towards the window). We find that once we have caused the A, the subsequent occurrence of the B does not depend on us in any way and so is an effect caused by the A; we cause the A and it causes the B; and since we can cause B's again and again by causing A's, the A causing the B is an instance of a regular causal succession. So we come to see that the concept of causation which we derive from ourselves intentionally causing effects, applies also to regular successions of events over the development of which we have no control. Hence we come to see the B-type events as caused in the same sense as the effects of our basic actions are caused, except that the causation need not be intended.

Our primary awareness of causation is then an awareness of an agent (oneself), not an event, causing an effect.[15] And because our awareness of causation is not an awareness of regular successions of events (which are the events they are independently of their causal influence), it follows that an agent can cause an effect without that entailing that similar agents would cause similar effects under similar circumstances. So singular causation is possible.

Once we realize that there can be unobservable causes and singular causes, it becomes evident that we need a wider account of the grounds for believing x to be cause of y, than that x is an A, y is a B, and that we have observed that (in our experience) A's are followed by B's, and that all B's are preceded by A's, (or rather we need such an account of the grounds for attributing causes to those events which we did not ourselves intentionally cause). These normal grounds, to give a very condensed account of them which would be acceptable to many contemporary philosophers of science, are that it follows from an explanatory hypothesis H which is rendered probable by data, that x is the cause of y. An explanatory hypothesis (or theory) is rendered probably true by data (evidence) insofar as (1) the hypothesis predicts, that is makes probable, much evidence observed to be true and no evidence observed to be false , (2)the hypothesis 'fits in' with any 'background evidence'(that is, it meshes with theories outside its scope which are rendered probable by their evidence in virtue of these criteria) , (3) the hypothesis is simple, and (4) the hypothesis has small scope. I understand by 'evidence' the phenome-

na which the hypothesis, if it is true, would explain; and I contrast this with 'background evidence' which is evidence relevant to theories outside the scope of H. By the hypothesis 'predicting' evidence, we should understand merely that it makes probable much observed evidence and no evidence observed to be false. It is, I suggest, irrelevant, whether the evidence is discovered before or after the formulation of the theory. The scope of a hypothesis is a matter of how much it purports to tell us about the world, in the extent and precision of its claims; the more the hypothesis claims, the less likely it is to be true. Simplicity however carries more weight than scope; scientists consider some theory of enormous scope (e.g. a theory of the evolution of the physical universe from the Big Bang) quite probable if constitutes a simple explanatory hypothesis. There may be no relevant background evidence, and then criterion (2) drops out. One case of this is when a hypothesis has very large scope (as does Quantum theory) and so there is little if any evidence about fields beyond its scope. The relative probability of large scale theories of equal scope, such as theism and rival theories of why there is a universe of our kind, depends on criteria (1) and (3) alone; and so in the case of theories leading us to expect the evidence with the same probability (that is, satisfying criterion (1) equally well), on criterion (3) alone. A theory is simple insofar as it postulates few substances, few kinds of substance, few properties (including powers and liabilities), few kinds of properties, and mathematically simple relations between them. And scientists have often recognized that it is simpler to postulate an infinite degree (one to which there is no limit) of a quantity rather than some very large finite degree – when hypotheses postulating either kind of quantity are equally able to satisfy criterion (1). For example Newton postulated that the force of gravity was transmitted with infinite velocity, while the supposition that it was transmitted with a very large finite velocity would have predicted the evidence equally well[16].

It follows from this general account that if we have observed many A's followed by B's, no A's not followed by B's, and no B's not preceded by A's, that the theory 'All and only A's cause B's' is the simplest explanation of the data, and so the most probable explanation of the occurrence of another B is that it was caused by an A. But my general account allows hypotheses in terms of unobservables or of entities which are (in a causally important respect) the only ones of their kind, to be rendered probable by evidence.   Hence a hypothesis postulating one simple entity which predicts very many data quite inexplicable otherwise may be rendered probable thereby, and so therefore may be any new explanations which that simple entity provides. Hence, contrary to Hume, natural theology is possible.

I should add that, as well as these very general arguments against the possibility of natural theology arising from his claims

about the limits to human understanding and knowledge, Hume had various arguments to the effect that even if we allow that theism could be considered as a possible explanatory hypothesis, it isn't a very probable one. Section 11 of his *Enquiry Concerning Human Understanding* and his *Dialogues Concerning Natural* Religion discuss the form of the argument to design which has as its data the intricate construction of the bodies of humans and animals, and argues thence to God as their designer. In effect he considers it as an argument purporting to satisfy the kind of criteria which I've just advocated, and claims that it does not satisfy them very well. He claims that there are data incompatible with the hypothesis (e.g. human suffering), and other equally probable rival explanations of the data of the intricate construction of bodies (e.g. in terms of the action of many gods, or of chance). These claims need to be considered in detail – I believe that they all fail.[17] But they are claims which, unlike the claims which I have been discussing so far, do allow any detailed arguments of natural theology to be discussed on their particular merits; they do not rule out the possibility of natural theology in advance.

Hume's general principles about the limits to human understanding and knowledge had a great influence on Kant; and although it is Kant and not Hume who has had such a great influence on continental philosophy, I have spent so much time discussing Hume, because Kant inherited some of Hume's bad mistakes. Kant did of course however have a far more sophisticated philosophy than Hume's crude empiricism. To start with, Kant made the needed distinction between concept and object, in consequence of which his 'concept' was no mere faint image. He tells us that the inputs to our mental life are 'intuitions' and that these are interpreted by concepts. Since, he claims, the only intuitions humans can have are 'sensible intuitions', the categories yield knowledge only insofar as they can be applied to such intuitions - 'The categories, as yielding knowledge of things, have no kind of application, save only in regard to things which may be objects of possible experience'[18] and that –according to Kant- means 'sensible' experience. Although – unlike Hume – he allows, we can have concepts of objects outside possible experience, concepts of an infinitely divisible substance, and of *noumena*, and – more particularly- the concept of a supreme being, we cannot, he held, reason about such objects; and so he adopted a modified form of Hume's view. Kant wrote 'if no intuition could be given corresponding to the concept, ... so far as I could know, there ... could be nothing to which my thought could be applied'.[19] Hence, like Hume, Kant denied that we could have any knowledge of causes apart from ones connecting sensible phenomena in regular ways. Thus: 'the principle of causality has ... no criterion for its application save only in the sensible world'[20] since causation consists 'in the succession of the manifold, in so far as that succession is subject to a rule'.[21] Hence again no scope for natural theology.

His claim however that our 'categories' (i.e. concepts) have no use in providing knowledge except when applied to objects of 'possible' sensible experience, raises the question of how we know which sensible experiences are 'possible'. 'Possible' for Kant is logically possible or objectively conceivable; and Kant purported to have demonstrated some firm results about the limits to conceivable experience, none of which seem to me plausible. For example he claimed that 'we can represent to ourselves only one space; and if we speak of diverse spaces, we mean thereby only parts of one and the same unique space',[22] and that our concept of space yields synthetic a priori knowledge that its geometry is Euclidean.[23] But it seems possible to describe what it would be like to experience life in a closed but unbounded universe (which would not be Euclidean) – it would be such that in whichever direction you go, you would eventually seem to come back to your starting point. [24] And if you found it possible by taking a pill or entering a strange cupboard[25] or just by falling asleep[26] to reach a place which did not belong to the fully explored space of the previous universe, it would be a universe in a different space. The only way to determine whether it is logically possible that we could have such experiences is by the painstaking method described earlier, beginning with the principle that the apparently logically possible is good evidence of what is really logically possible.

But even if a category derived from experience is applied to something which cannot be experienced, it does not follow that we cannot have knowledge of the latter. Whether we can or not depends on whether a hypothesis using that concept is logically possible (as shown in the way set out earlier) and rendered probable by observed evidence. If a hypothesis about unobservable persons is logically possible and yields many good predictions, that is reason to suppose that it is probably true. And if the probability is high enough, we can (very probably) know that it is true.

Kant's most important use of his principle about the limits to knowledge was his claim that since only the conditioned could be an object of possible experience, we can have no knowledge of the 'unconditioned' (that which is unlimited – such as the whole physical universe throughout space and time), and so we can have no knowledge of God, the supposed cause of all things, unconditioned in his power, knowledge, length of life etc. Kant claimed to illustrate by showing how various attempts to acquire knowledge of the unconditioned land us in irresoluble conflicts. The 'Antinomies of Pure Reason' purport to show how if we adduce an argument in favour of some position about the unconditioned we find that there is an equally plausible argument in favour of the opposite position. These arguments all appeal to purported rational principles, and certainly show is that either the principle invoked in the thesis or the principle invoked in the antithesis (or both) must be fallacious; but in my view– de-

spite Kant – none of these principles are obvious necessary truths of reason, and evidence can often make one such principle more probable than another. Thus the form of the thesis concerned with time in the first antinomy depends on the principle that 'the infinity of a series consists in the fact that it can never be completed through successive synthesis.'[27] The obvious response is that the principle (seemingly stated as a mathematical truth) is misstated. It should read 'the infinity of a series *with a first member* consists in the fact that it can never be completed through successive synthesis'; and since the first antinomy is concerned with a series with a last member but without a first member, it is not relevant. The antithesis depends on the principle that 'no coming to be of a thing is possible in an empty time.'[28] Kant claims that he has proved in the second analogy[29] that this is necessary, that it is an indispensable law of the empirical representation of the temporal series that the appearances of a past time determine every existence in the following time. His claim is that our ability to distinguish in a succession of perceptions those the order of which depends solely on us (whether we look at this part of a house before that part or vice versa) and those the order of which depends on objective change in the world (seeing the ship first higher in the stream, then lower in the stream), requires the assumption of an objective causation in the world (the earlier position of the ship causing its later position)[30]. It is true that we can have no knowledge of events unless they have causes or effects from which we can infer them, and we can only make such an inference about the world beyond our immediate experience if in general there are regular causal sequences in the world. But we can learn about some events from observing their effects and about other events by predicting them from their causes. We do not have to suppose that every event of which we have knowledge has a cause. It may be that tracing back the states of our universe in accord with what are on our evidence very probably the laws of nature leads to a physically impossible state at some earlier time, and so we can conclude that very probably the universe began to exist after that time[31].

Similar problems beset the version of the first antimony concerned with Space. The thesis designed to show the impossibility of an infinite space claims that to think of such a space as a whole, we must regard it as consisting of an infinite number of parts, to enumerate which would take an infinite amount of time. Kant claimed to have shown that we cannot justifiably suppose there to be such an infinite time; but we have just seen the fallacy in Kant's argument about this. The antithesis of the argument about space relies on the claim that if 'the world in space is finite and limited' it would exist 'in an empty space which is unlimited.'[32] But that does not follow if space is closed and unbounded, and we could have evidence that space is closed and unbounded – either evidence of experience (see earlier) or evidence that the theory that it is closed and unbounded is

probable on various data observed by physicists.

While there are, I believe similar problems of detail with the thesis and antithesis arguments of the other antinomies, the failure of Kant's claims about the first antinomy should suffice to show that there is no general reason to suppose that there must always be equally plausible arguments in favour of rival claims about the unconditioned. And there are two fundamental problems with all Kant's arguments about these issues. The first problem is that he thinks that our knowledge of the world depends on certain knowledge of some necessary principles about the world (e.g. 'every event has a cause'); and this restricts our knowledge of the world to those aspects of it governed by those principles of which we can have certain knowledge . But of course, as Butler wrote a few decades earlier, 'to us [i.e. humans, opposed to God], probability [not knowledge] is the very guide of life'[33]. And the second and connected problem for Kant is that he did not have a clear idea of what are the criteria for observed data making probable a theory about the unobservable – which I expounded earlier. There is a simple historical explanation of this ignorance. Kant died in 1804. It was only in 1803 that the first version of an atomic theory of chemistry was proposed by Dalton which gave –by the criteria I expounded – a very probable explanation of the details of observed data (such as the fixed ratios by weight in which substances combined to form new substances). Before Dalton theories about the unobservable were simply unevidenced speculations. Since Dalton, scientists have produced evidence making probable detailed theories not merely about things too small, but about things too big, too old, and too strange to be observed. Kant had great respect for the physical sciences; if he had known of their subsequent history, he might have acknowledged great scope for human reason to acquire probably true beliefs about matters far beyond the observable.

As well as adducing arguments depending on his principles about the limits of intelligibility and the impossibility of knowledge of the unconditioned, Kant had one further influential argument against the possibility of arguments to the existence of God. He claims that all other arguments of natural theology, which he considers to be merely the cosmological and 'physico-theological' arguments, depend for their soundness on the ontological argument. While he allows that it is 'an admissible hypothesis' to postulate 'an all-sufficient being, as the cause of all possible effects'[34] , he nevertheless claims that we would need an ontological argument to show that such a being exists necessarily, that is of logical necessity; and he assumes that the concept of God is the concept of a being who exists of logical necessity. He thinks that he has shown that no such argument can work, since 'there is not the least contradiction' in the judgment 'there is no God'. 'I cannot', he writes form the least concept of a thing

which, should it be rejected with all its predicates, leaves behind a contradiction.'[35]   He can make no sense of the possibility, let alone have grounds for believing in the actuality, of such a being.

It seems to me, as to Kant and to most modern non-religious philosophers, not merely that there cannot be a sound ontological argument from evident premises for the existence of a logically necessary God, but that there cannot be any logically necessary substance, understood as a logically necessary being which can cause or be acted upon causally. It seems to me, for example, evident that it is logically possible that '10 billion years ago there were no rational beings'; it follows from that, since God is essentially an eternal rational being, that it is logically possible that there is no God, and so that it is not logically possible that there be a logically necessary God. Similar arguments will show any supposition of the existence of any suggested logically necessary substance to be logically impossible. Of course a proponent of an ontological argument will deny that '10 billion years ago there were no rational beings' is logically possible, and will offer instead one or more rival premises which seem to him logically possible from whence he will derive his conclusion. The only way to settle this issue is by arguments of the kind discussed earlier. But I do suggest that it is a lot more evident to most people that the premise which I offer is logically possible than that any premise of an ontological argument is logically possible.

I very much doubt however whether any philosopher or theologian before Anselm thought of God as a logically necessary being. Aquinas claimed that God was a 'necessary' being, but as he thought of angels who did not exist 'from eternity' and were voluntarily created by God, as necessary beings,[36] he clearly did not mean by 'necessary' logically necessary. He seems to think of a necessary being as one not subject to corruption, that is one which will go on existing forever unless caused not to exist by something else. Aquinas distinguished God from other necessary beings as a 'being necessary through its own nature (*per se*) and not caused to be necessary by something else'[37] Angels depend for their non-corruptibility on God, whereas God is intrinsically necessary. I suggest that the fact that we cannot make sense of the concept of a logically necessary being has no relevance to the possibility of constructing a cogent argument to a being necessary in some other sense, e.g a being not contingent on the existence of any other being for its own existence, which is a property which all traditional theists have believed God to have.

So, I have argued, despite the great influence which the arguments of Hume and Kant about the limits of intelligibility and knowledge have had on philosophers and theologians, these philosophers have not provided any good reason for denying the possibility of a cogent natural theology. Such a theology will begin from the data of the most general features of the universe, such as that it is governed en-

tirely by simple laws of nature which are such as to lead somewhere to the evolution of human bodies, and that humans are conscious beings having a choice between good and evil. It will argue that the simplest explanation which makes it probable that these data will occur is that the universe is caused (either at a first moment or everlastingly) by an essentially eternal omnipotent, omniscient, and perfectly free being (from which the other divine properties follow), whom we may call God; and so the data make it probable that there is a God – by the criteria described earlier. I believe that such a natural theology can be constructed, and I have argued for it at length elsewhere[38]

NOTES

1. This paper is also being published in a volume of papers of a conference at Tubingen on 'Arguments for the Existence of God', which took place in March 2011, and in *European Journal for Philosophy of Religion*.

2. For my brief account of the development of natural theology within Judaeo-Christian thought, and of some opposition to it, see my *Faith and Reason*, second edition, Oxford University Press, 2005, pp. 106-121.

3. David Hume, *An Enquiry Concerning Human Understanding*, (ed.) L.A. Selby-Bigge, second edition., Clarendon Press, 1902, section 2.12. (My references to Hume's 'sections' are to the numbered paragraphs of the Selby-Bigge edition.)

4. op. cit. 2.13.

5. op. cit. 2.17.

6. op. cit. 2.13.

7. It cannot be a necessary truth that all our concepts are derived from experience. No doubt I get my concept of 'green' as a result of having seen green things in the past. But suppose a scientist of the future is able to create an exact duplicate of me as I am now. The duplicate would have the same concept of green as I have, and yet he would not have it as a result of having seen green things.

8. Hume seems to allow that we do have in some sense a concept of 'not' which he calls 'contrariety' and lists as a 'connection among ideas' *(Enquiry* 19n.); and that general ideas, and so the concept of 'any', are really particular ideas which call to mind other particular ideas (*Enquiry* 125n. summarizing his *Treatise of Human Nature* 1.1.7).But these brief remarks constitute mere 'hints' (see *Enquiry* 125n.) as to how a theory might be developed.

9. Logical positivists claimed that to be 'factually meaningful', which we may understand as 'logically contingent', a proposition had to be 'verifiable'. But if 'verifiable' is understood as 'conclusively verifiable', the claim becomes implausible since very few propositions are conclusively verifiable; and if 'verifiable' is understood as 'such that some possible evidence could make it more probable than it would otherwise be', very few propositions – if any (apart from any which are logically impossible) - would be excluded. Anyway there is no good reason for supposing that any form of verificationism is true;

our understanding of a proposition arises not from our understanding of how it could be verified, but from our understanding of its constituent concepts and the grammatical form of the sentence which expresses it. See my *The Coherence of Theism*, revised edition, 1993, ch.2.

10. There are probabilistic versions of arguments of these kinds, arguments from the fact that some proposition is logically possible to a conclusion that it is (epistemically) probable that a similar proposition is logically possible, and arguments from the fact that one proposition entails a contradiction to the conclusion that it is (epistemically) probable that a similar proposition does also . For example if one admits that it is logically possible that a human could live for ever, that seems to make it (epistemically) probable that it is logically possible that a tiger could live for ever. Such an argument is an argument to show that (probably) the relevant proposition does not entail a contradiction; but it does not have the compelling force of a deduction from an evidently logically possible premiss. One important kind of probabilistic argument to show that some proposition is logically possible is the following. It may be that some observed phenomena would be explained very well by some hypothesis, and so be very probable on normal criteria of what is evidence for what, if the proposition stating that hypothesis was logically possible. Thus the hypothesis that light is both particulate and wavelike may be shown to be (probably) logically possible, on the grounds that if it is logically possible it can explain the various phenomena of light - interference, diffraction, reflection, photoelectric effect, Compton effect etc, whereas the hypothesis that light is a particle and not a wave or the hypothesis that light is a wave and not a particle can only explain some of these phenomena. Without the supposition that light is both particulate and wavelike the occurrence of some of these phenomena would be very improbable; hence their occurrence is evidence for the truth and so the logical possibility of the supposition. Or someone might deny the logical possibility of a non-embodied person, yet faced with phenomena best explained by the hypothesis that there was a poltergeist (non-embodied person) in the room – e.g. handwriting being formed on a piece of paper without any visible or tactual hand writing it, etc etc. – might acknowledge the hypothesis as probably true and so probably logically possible. This kind of argument is not an argument from the logical possibility of such phenomena but from their actual occurrence (if they do occur). I discuss this type of argument in *The Coherence of Theism,* pp. 48-50.

11.'We may define a cause to be an object, followed by another, and where all the objects similar to the first are followed by objects similar to the second.' - op. cit. 7(ii).60. Hume does provide, in this passage and elsewhere, also a second definition of 'cause' as 'an object followed by another, and whose appearance always conveys the thought to that other', in other words a cause of an effect is an event which always leads us to think of the effect. But this is not a very plausible definition, and those in the Humean tradition have normally ignored it, and used the former definition to develop the 'regularity theory of causation'.

12. I am reading Hume in the traditional way as claiming that the 'necessity' by which a cause is followed by its effect just consists in 'constant conjunction'. Some recent writers claim that Hume has been misunderstood, and that all he was claiming is that we cannot have any more knowledge of the necessity of cause and effect than is provided by constant conjunction. See for example Galen Strawson, *The Secret Connection: Causation, Realism, and David Hume,* Oxford University Press, 1989.

13. David Hume, *Dialogues Concerning Natural Religion*, (ed.) H.D. Aiken,

Hafner, 1948, p. 23.

14. Hume had an argument against the view that we have a direct awareness of exerting causal influence. He claims that the will 'has no more a discoverable connection with its effects, than any material cause has with its proper effect.' Such a connection 'could not be foreseen without the experience of their constant conjunction'. See his *Treatise of Human Nature*, Appendix. I argue above that a 'will' (or a 'volition' or 'trying') to perform a basic action which consists in bringing about *x* cannot be identified except as that action which the subject believes to be an exertion of causal influence towards the production of *x*; and that when my trying is followed by the occurrence of the required event (*x*), it is probable that my trying is my causing (even in the absence of any evidence of constant conjunctions).

15. This may lead us – correctly in my view – to analyse all causation, not merely causation by intentional agents, as causation by a substance, not by an event. It is the brick, not the motion of the brick, which causes the window to break. The brick causes this because it has the power to transfer its momentum to another substance, and the liability to exercise that power when another substance impedes its motion. So when its motion is impeded by a fragile window, it will transfer its momentum to the window, and the window will break. It follows that 'laws of nature' are generalizations about the powers and liabilities of substances of different kinds; they depend on fundamental laws which concern the interactions of different kinds of particles (electrons, quarks etc), differing from each other in their powers and liabilities (e.g. to attract or repel other particles in different ways.) For defence of this view see the first four pages of my 'God as the simplest explanation of the universe ', *European Journal for Philosophy of Religion* 2 (2010) 1-24, and in (ed.) A. O'Hear *Philosophical Essays on Religion,* Cambridge University Press, forthcoming.

16. I discuss what makes explanatory hypotheses probable more fully in my *The Existence of God*, Oxford University Press, second edition, 2004,ch 3; and I give a systematic treatment of this my *Epistemic Justification*, Oxford University Press, 2001, chs 3 & 4. The latter contains a full discussion of the nature and role of the criterion of simplicity. But it is unsatisfactory in the respect that it gives separate accounts of the simplicity of an inanimate explanation (in terms of initial conditions and laws of nature) from that of a personal explanation (in terms of persons, their powers, beliefs, and purposes). I provide a unified account of the simplicity which makes explanations of either kind probable in 'God as the simplest explanation of the universe' (referred to in note 15).

17. For my analysis and refutation of the eight separate objections which I found in Hume's writings against the argument from design, his principal target in his attack on natural theology, see my 'The Argument from Design', *Philosophy* 43 (1968), 199-212.

18. I. Kant, *Critique of Pure Reason*, tr. N. Kemp-Smith, Macmillan, 1964, B147-8.

19. op. cit.B146.

20. op. cit. B637.

21. op. cit. B183. Of course Kant did not think that all regular successions were causal successions; but he did think, like Hume, that a case of causality consisted of an instance of a causal law which consisted in an event of one particular kind being followed regularly (and indeed invariably) by an event of another particular kind. For the last hundred years many thinkers in this tradition have allowed that, as well as deterministic causal laws which consist

of an event of one particular kind being followed invariably by an event of another particular kind, there can be probabilistic causal laws which consist in an event of one particular kind being followed with high (physical) probability by an event of another particular kind.

22.   op. cit. B 39.

23.   op. cit. B 744-5.

24.   See the description of the experiences which an inhabitant of a particular kind of closed universe, a 'torus' universe, would have, in Hans Reichenbach, *The Philosophy of Space and Time*, Dover Publications, 1958, section 12. Reichenbach points out (p. 66) that, given the experiences which he describes, someone could insist that the geometry of the universe was Euclidean only by adopting a wildly implausible hypothesis of 'preestablished harmony'.

25.   As in the Narnia stories of C.S. Lewis - see his *The Lion, The Witch and the Wardrobe* and *The Magician's Nephew*.

26.   As in the story told in Anthony Quinton 'Spaces and Times' republished in (ed.) R.Le Poidevin and M.Macbeath, *The Philosophy of Time*, Oxford University Press, 1993.

27.   op. cit. B454.

28.   op. cit B455.

29.   op. cit. B233-256.

30.   For exposition of this argument see Paul Guyer, *Kant*, Routledge, 2006, pp.109-112.

31.   As argued in my *Space and Time*, second edition, Macmillan, 1981, ch.15. We would have no justification for postulating an earlier state of the universe governed by different causal laws.

32.   op. cit. B 456.

33.   Joseph Butler, *The Analogy of Religion*, Introduction.

34.   op. cit. B640.

35.   op. cit. B623.

36.   See his *Summa theologiae* Ia. 61.3ad3 and Ia.50.5ad3. He holds that human souls are also necessarily incorruptible (op.cit Ia.75.6), though he refrains from calling them 'necessary beings'.

37.   op. cit. Ia. 2.3. Admittedly, Aquinas thought that 'God is the same as his own nature or essence' (Ia.3.3); but he goes on to claim that anything immaterial, not just God, is the same as its own nature. His point is simply that material things are individuated by the matter of which they are made, whereas immaterial things are individuated by their forms, that is natures. I know of nothing in Aquinas which should lead us to suppose that he thought God's existence was a logically necessary truth. He certainly thought that Anselm's 'definition' of God did not entail a contradiction (Ia.2.1.ad.2), and I know of no reason to suppose that he thought that any other 'definition' (in our sense) would entail a contradiction.

38. See my *The Existence of God,* second edition, Oxford University Press, 2004; and the short 'popular' version, *Is There a God?,* revised edition, Oxford University Press, 2010.