HUME AND EDWARDS ON 'WHY IS THERE SOMETHING RATHER THAN NOTHING?'

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There is no known proof that the physical universe had a beginning. For this reason, if no other, proponents of the Cosmological Argument are barred from asking, 'What was the cause of the first physical event?'. What they can do instead is to make the unfavourable assumption that there has been an infinite succession of physical events and then ask, 'Why is it that instead of there having been no physical events, there has been an infinite succession of physical events?'. Those who wish to avoid supernaturalistic explanations generally have given one of the following three answers.

1. That there has been an infinite succession of physical events is a fact for which there *is* no explanation.

Some who take this position would add that the fact in question is not the sort of fact for which an explanation is possible. This is the line taken by Bertrand Russell in his broadcast debate with F. C. Coppleston.[1]

2. There having been an infinite succession of physical events is explained by the fact that the physical universe (or a component of it) exists as a matter of logical necessity. It is the sort of being which could not not exist.

This answer is available both to those who hold that nature is divine (i.e., pantheists) and to those who do not.

3. For every member of the infinite succession of past physical events, there is an explanation of why that event occurred. Collectively, these explanations constitute an explanation of why there has been an infinite succession of physical events.

This is a position that has come to be associated with David Hume and Paul Edwards, and I will follow William Rowe[2] in calling it the Hume-Edwards position. The *merits* of this position will be the subject of my paper.

As a preliminary, let's take a quick look at some of the pertinent passages from Hume and Edwards. In Part IX of the *Dialogues*, Demea remarks:

> The question is still reasonable why this particular succession of causes existed from eternity, and not any other succession or no succession at all.[3]

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[1] Printed in John Hick, ed. *Classical and Contemporary Readings in the Philosophy of Religion*, 2nd ed. (Englewood Cliffs, New Jersey: Prentice-Hall, 1970). See pp. 288-289.

[2] William Rowe, *The Cosmological Argument* (Princeton: Princeton University Press, 1975), p. 153.

[3] Richard H. Popkin, ed. *Dialogues Concerning Natural Religion and the Posthumous Essays* (Indianapolis: Hackett Publishing Company, 1980), p. 55.

Cleanthes replies, in part:

> In such a chain, too, or succession of objects, each part is caused by that
> which preceded it, and causes that which succeeds it. Where then is the
> difficulty? But the *whole*, you say, wants a cause . . . Did I show you the
> particular cause of each individual in a collection of twenty particles of
> matter, I should think it very unreasonable should you afterwards ask me
> what was the cause of the whole twenty. This is sufficiently explained in
> explaining the cause of the parts.[4]

Paul Edwards takes the same line. After discussing his well-known case
of the five Eskimos in New York, Edwards concludes:

> . . . the theists have at least one brute fact on their hands, namely God.
> Those who adopt Buchner's formulation [that the universe is necessary]
> also have one brute fact on their hands, namely 'the universe'. Only the
> position I have been supporting dispenses with brute facts altogether.[5]

Now certainly it would be pleasant, at least for those of us who are
naturalistically inclined, to think that cosmology can dispense simultaneously
with supernatural beings, necessary existents, and brute facts. (I don't wish
to say that the existence of a necessary being would be a brute fact. I prefer
to say that its existence would be explained by its being the sort of being
which could not not exist.) It will be my contention, however, that Hume
and Edwards have not succeeded in showing how this can be done. In section
I, I will argue that Hume and Edwards have failed to explain why there always
has existed a physical universe. In section II, I will reinforce my case with
what is, I believe, a vivid counterexample to their style of explanation.

I

Instead of focusing on the exact question raised by Demea, I want to
consider a slightly different question. Continuing to suppose that the physical
universe has existed for an infinite amount of time, I want to ask this.

Q Why is it that matter always has existed?

Two preliminaries: (1) We will be using the term 'matter' to avoid the tedium
that would be involved in frequent use of the term 'mass-energy', but it is
mass-energy that really will be meant. (2) It will simplify our discussion to
assume that time is absolute and that the past would be infinite even if the
age of the universe were finite.[6] This will make it easier to formulate and
discuss Hume-Edwards style explanations, but neither the style of explanation
nor my criticism of it *requires* this assumption.

Presumably, a supporter of the Hume-Edwards approach would answer

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[4] *Ibid.*, p. 56. I am following Edwards and Rowe in taking this passage to be an expression
of position 3. No doubt other interpretations are possible.

[5] Paul Edwards, 'The Cosmological Argument', in Donald R. Burrill, ed. *The Cosmological
Arguments* (Garden City, New York: Anchor Books, 1967), pp. 122-123.

[6] If time is relational, and if it should be the case that matter (mass-energy) is the only thing
capable of undergoing change that there logically *could* be, and if 'always' is interpreted
'hypothetically', then matter's 'always' having existed would be logically necessary.

Q as follows. 'For every past time t,[7] there is an explanation of why matter existed at t. (It is explained by the fact that matter existed at a time earlier than t — combined with the principle of the conservation of matter.) Collectively, these explanations explain why it is that matter existed at every past time.'

To help us evaluate this answer, let's formulate the fact, F, to be explained and the proposed explanans, E.

F Matter always has existed.

The explanans for F is said to be constituted by a set of explanantia. One member of the set is the following proposition: Matter existed at a time earlier than 3 p.m., 1/1/1900; and matter is conserved. Collectively, then, the explanantia amount to this.[8]

E For every past time t, matter existed at a time earlier than t; and matter is conserved.

The question is whether E explains F. It is clear, of course, that E logically implies F, but I will argue that E does not explain F. At most, E explains a 'part' of F. Consider the following propositions.

N It is not the case that matter *never* has existed.

S It is not the case that matter has existed *just some* of the time.

Now F is equivalent to the conjunction of N and S, and I am willing to allow that E explains S. (The explanatory force resides entirely in E's second conjunct.) But since E does not explain N (although it logically implies it), and since, in seeking an explanation for F, we are at least as interested in an explanation for N as for S, E cannot be said to explain F. It explains only a part of F.

The argument may be laid out as follows.

Premiss 1   F is logically equivalent to the conjunction of N and S.
Premiss 2   In seeking an explanation for F, we are at least as interested in an explanation for N as for S.
Premiss 3   (At least in the present context) E does not explain N.
Premiss 4   For any propositions W,X,Y,Z: If X is logically equivalent to the conjunction of Y and Z, and if, in seeking an explanation for X, we are at least as interested in an explanation for Y as for Z, then W explains X only if W explains Y.
Conclusion E does not explain F.[9]

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[7] Since the present moment belongs to the period of time during which matter 'has' existed, it would be more fitting, though cumbersome, to say, 'For every past *and present* time t'. Instead, we will simply let it be understood that here and elsewhere, this is what we mean.

[8] The sense in which the set, E', of explanantia 'amounts to' E is this: Necessarily, E is true if and only if all members of S are true. I will be assuming that E' explains F only if E explains F. But if this assumption should be questioned, I would drop if and identify the explanans as E'.

   E' {P: (∃t)(t is a past time, and P is the proposition which asserts that matter existed at a time earlier than t and that matter is conserved.)}

   The only reason for identifying the explanans as E is that E is more easily held in mind. When we later come to the third premiss of my argument, the reader should note that that premiss would be *at least* as plausible if 'E' ' were substituted for 'E'.

[9] Anyone doubting that Hume and Edwards are committed to denying this conclusion may substitute 'E' ' for 'E'. (See note 8.)

The first premiss is true as a matter of logic, the second as a matter of empirical fact. The third and fourth call for discussion. Let's begin with the fourth.

It might be thought that premiss 4 is unnecessarily weak, that we could appeal to this stronger (and simpler) principle.

> For any propositions W,X,Y: If X entails Y, then W explains X only if W explains Y.

But here is a case which appears to be counterexemplary. On learning that Fred, our hitherto healthy neighbor, collapsed and died at his 100th birthday party, we ask for an explanation. We are told that one of Fred's old girl friends was brought in for his 100th birthday and that Fred became overexcited and suffered, in consequence, a massive heart attack. Now this explanation, one would think, may be quite satisfactory. It seems clear, however, that the explanans (even if supplemented with laws sufficient to permit the deduction of the explanandum) does not explain the following logical *consequence* of the explanandum: Fred reached the age of 100. Since, we will suppose, Fred's having reached 100 is not an aspect (consequence) of the explanandum for which we were desiring an explanation, we may be satisfied (and, it may be claimed, the explanation is satisfactory), even though this consequence has not been explained.

Premiss 4, of course, is protected from this sort of counterexample by its second 'if' clause. Since the premiss is highly plausible, and since I can think of no way in which it might be challenged, I am content to let it stand as an ultimate premiss of my argument.

Let's look now at premiss 3. The way in which this premiss might be established is by reference to some necessary condition of explanatory satisfactoriness. Unfortunately, it is far from clear what the necessary conditions of explanatory satisfactoriness *are*. All would agree, I believe, that the explanans must not be identical with the explanandum. But I know of nothing else that is universally agreed to be necessary (apart from things that are *trivially* necessary, such as that the explanation be satisfactory.) (Of course, no one holds that the non-identity of explanandum and explanans is a *sufficient* condition.) Having no hopes of establishing the necessity of some condition whose necessity has not hitherto been established, I plan to provide for premiss 3 support of a decidedly more modest character. First, I will note that the putative explanation of N by E fails to meet a condition often *held* to be necessary. Second, I will show that even on the relatively permissive *pragmatic* concept of explanation, there is no apparent reason to count E a satisfactory answer to our question about N. Afterwards we'll consider where this leaves us.

On deductive-nomological theories of explanation, the explanans standardly is required to contain a law that actually is *needed* for the deduction of the explanandum.[10] Since N follows from E's left conjunct, and since,

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[10] Cf. Carl Hempel and Paul Oppenheim. 'Studies in the Logic of Explanation', reprinted in Carl Hempel, *Aspects of Scientific Explanation* (New York: The Free Press, 1965), p. 248.

presumably, the latter is not a law, deductive-nomological theorists can be expected to accept premiss 3. (The violation is even clearer when N is explained by E', which I regard as the official explanans. [See note 8.])

On pragmatic theories,[11] an explanation may be satisfactory in one context and unsatisfactory in another. The relevant features of the 'context' generally are the beliefs, interests, attitudes, and/or other psychological states of the intended audience. If, in a certain context, an explanation can be expected to produce a sense of understanding, or at least reduce the felt need for explanation, then relatively few additional conditions may need to be met in order for the explanation to be judged, by proponents of some pragmatic theory, satisfactory in that context. I want, therefore, to ask whether there is some realistic context in which an audience wondering about N might be satisfied by E. So far as I can imagine, the only such context is one in which the audience had assumed the contradictory of S. For an audience who had not thought of the possibility of F, or who had assumed F not to *be* a possibility, the truth of N would call out loudly for explanation. It would mean that some finite number of years ago, the physical universe suddenly popped into existence. If this audience were then persuaded that N is true by virtue of the truth of F (which is entailed by E), rather than of the contradictory of S, the audience might well cease to find N so surprising. In any event, the present context is not of this sort. Our question about N arose not in a context in which we were assuming the contradictory of S, but in one in which we had all along been supposing *F*. In the context of our discussion, there is no apparent way to understand how an audience wondering about N could be satisfied by E.

Although the preceding two paragraphs provide some support for premiss 3, the principal basis for accepting this premiss is its own plausibility. Given the sorry state of explanation theory, it is not possible to exhibit premiss 3 as the consequence of universally accepted principles. But the failure of E to explain N seems sufficiently clear that any theory giving a different result would be seriously embarrassed.

Where does this leave us? My argument has four premisses, none of which has here been proven. But, of course, all arguments rest ultimately on unproven premisses. Mine are highly plausible; there is no apparent reason *not* to accept them; and to my knowledge, no one has ever denied them. Furthermore, it should be borne in mind that the present paper does not belong to that *genre* of philosophical writing in which the object is to provide a theoretical basis for accepting something already universally or generally accepted (such as that cruelty is wrong or that the sun will rise tomorrow). The object is to persuade the reader of the probable incorrectness of what I take to be a widely held belief: that Hume and Edwards have shown how cosmology can dispense simultaneously with supernatural beings, necessary existents, and unexplainable facts. It is now up to anyone still wishing to

[11] Cf. Peter Gardenfors, 'A Pragmatic Approach to Explanations,' *Philosophy of Science*, 47 (1980), pp. 404-423 and Peter Achinstein, *The Nature of Explanation* (New York, Oxford: Oxford University Press, 1983).

hold that position to say which of my premises he proposes to reject and to provide some way of making this rejection palatable.

Before closing this section, I want to add three points of clarification. (1) I have claimed that F is not explained by E. I have not, of course, claimed that F must *have* an explanation. Perhaps Russell's position is the correct one. (2) I have not disputed the adequacy of the individual explanations. For example, I have not objected to the proposed explanation of the fact that matter existed at 3 p.m., 1/1/1900. I have not claimed that because the explanans is itself in need of explanation, it fails to explain its explanandum. (3) I certainly agree with Hume that to explain the existence of each member of a collection of twenty particles is to explain the existence of the 'whole twenty.' For the relevant difference between that case and cases such as explaining F by E, the reader is referred to a very helpful discussion by William Rowe.[12]

II

In this section, I will reinforce the case against Hume and Edwards by providing what is, I believe, a clear counterexample to the principle on which they rely.

Here is the version of their principle which I wish to challenge.

> P For any set S of times and any physical object x: If for every time belonging to S there is an explanation of why x exists at that time, these explanations, taken collectively, explain why it is that x exists at every time belonging to S.

In section I, what we were supposing was that there always has been matter. If we had supposed that there is some physical *object* (an elementary particle, say) which always has existed, and if we had challenged the Hume-Edwards theorist to explain *that* (which ought not to be more difficult), presumably he would have needed to appeal to P — instantiating 'S' with the set of all past (and present) times.

My counterexample to P will depend on the assumption, which is standard in mathematical physics, that time is continuous. Actually, I need only the weaker assumption that continuous time is a logical possibility. It is widely conceded nowadays that none of the *a priori* arguments of Zeno, including the paradox of plurality, succeeds in disproving the continuity of space and time.[13] So far as I am aware, these are the only important arguments against the *possibility* of continuous time. I must acknowledge, however, that my example will be acceptable only to those who will grant that time is, or could have been, continuous.

Suppose that five minutes ago, to our great astonishment, a full grown duck suddenly sprang into existence on the table in front of us. Suppose, furthermore, that there was no *first* moment at which the duck existed, but

[12] Rowe, *op. cit.*, pp. 151-159.
[13] Cf. Wesley Salmon, *Space, Time, and Motion,* 2nd ed. (Minneapolis: University of Minnesota Press, 1980), Chapter 2.

rather a *last* moment at which it had yet to exist. That is, suppose there was a time t such that the duck did not exist at t, had not existed at any time earlier than t, but has existed at every time since t.

Such an episode would be similar in one relevant respect to what happens when an object begins to *move*. It is an axiom of kinematics that velocity varies continuously with time. If so, then when an object begins to move there is no first moment at which the object is in motion, but rather a last moment at which it is at rest.

Assuming that the bizarre episode I have described is a logical possibility, it provides a counterexample to P. Here's why.

Let's use 't_0' as a name for the last time at which the duck had yet to exist, and let's use 'I' for the set of times belonging to the interval between t_0 and now, exclusive of t_0. I, then, contains all and only the times at which the duck has existed.

Now for every time t belonging to I, there is an explanation of why the duck exists at t. The explanation is that the duck existed at a time t' earlier than t (but later than t_0), and it was only to be expected that a healthy duck would endure throughout the brief period between t' and t. If the duck had existed at t_0 (but not earlier), there would have been a question to which we would have had no ready answer: Why did the duck exist at t_0? But since for every time at which the duck has existed, there was an earlier time at which the duck existed, there is no time such that we lack an explanation of the duck's existence at that time.

Clearly, though, and contrary to P, these explanations, taken collectively, do not explain why it is that instead of having existed at *no* time since t_0, the duck has existed at every time since t_0. Perhaps it is the work of God. Perhaps there is a naturalistic explanation. Perhaps there simply *is* no explanation. In any case, the individual explanations do not explain it. (If they did, then if God appeared and *informed* us that there had been no first moment at which the duck existed, and if he subsequently reappeared to reveal that *he* was responsible for the episode, all of which would seem to be logically possible, then at God's second appearance we would not be learning an explanation for anything for which we lacked one. But clearly we would be.)

I want to reply to one possible objection. It may be said that when an object comes into existence, there are times at which it is indeterminate whether the object has yet begun to exist. Think of the gradual assembly of a car. Due to the imprecision of our criteria of carhood, there are times at which it is neither true nor false that the car has begun to exist. Therefore, it is true neither that there is a first moment at which the car exists nor that there is a last moment at which it has yet to exist.

The reply is as follows. It may well be true that in most, or even all actual cases, there are times at which it is indeterminate whether the object in question has begun to exist. This is due to the fact that objects typically come into existence as a result of the joining of a number of pre-existing parts. Since different parts join at different times, and since there generally is at least a small interval of time during which it is indeterminate whether a given

part has yet joined, there is no precise time of origin. But none of this applies to an object which, together with all of its parts, pops into existence fully formed. Only if this latter were a logical impossibility would my argument be blocked.

So, I believe we should reject the principle on which Hume and Edwards rely. In addition to the argument of section I, we have the duck counterexample of section II.

Why, then, is it the case (if, indeed, it is) that there always has existed a physical universe? If we reject the answer of Hume and Edwards, three possibilities remain. There is a supernatural being, the physical universe exists as a matter of logical necessity, or the existence of the universe is a fact for which there is no explanation.[14]

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