THE MYSTERY OF THE UNIVERSE

Peter Lyth

The 'why' question is very deep seated in human nature. Children indeed are always asking such questions: Why is there lightning and thunder? Why is there the sun and moon? Sometimes they ask questions which confound their mentors: e.g. 'Why is there a universe?'

The normal way of answering 'why' questions is in terms of other parts of the universe, of larger contexts, or of the laws of physics (or other science). For example, we hear thunder because there was an electric discharge some distance away; we have two eyes because evolution found that profitable for survival; the earth goes round the sun because of Newtonian or Einsteinian laws.

Now each of these explanations needs a further explanation: Why was there an electric discharge? Why did evolution find sight profitable? Why are the laws of physics as they are? And the first two types of explanation are usually thought to boil down in the end to the third type of explanation, that all events are accounted for by the laws of physics (and of other sciences arguably, such as psychology for experiential events, but the type of science in question is not important for our argument, so we will for the sake of simplicity refer below just to physics). So the question 'why are the laws of physics as they are?' becomes particularly important.

Again, it is usual to appeal to larger contexts: the Newtonian laws are approximations of Einsteinian laws, the latter covering a greater number of events. But still, and this is the crucial point, the Einsteinian laws could be different without self-contradiction. For example, the 'constants' (constant numbers) in the equations, and any of the magnitudes (e.g. mass of a proton) could have been different

doi:10.1017/S1477175609990017
Think 23, Vol. 8 (Autumn 2009)

without self-contradiction, as could the 'initial conditions' (if such a concept is admissible in the case of the 'Big Bang').

Thus the question 'Why are the laws of physics as they are begins to elicit the same sense of unfathomable mystery as the child's question 'Why is there a Universe?'

This is where David Lewis [*The Plurality of Worlds* (Oxford: Blackwell, 1986)] enters the stage. We have said that the universe could have been other than it is, without self-contradiction. Lewis says that these 'could have' possibilities are as real as the actual universe we live in. Thus we can no longer ask 'Why is the universe this way rather than that?', because there *is* a universe which is that way rather than this. (And we can no longer ask, 'Why is there a Universe?', because there *is* a universe which is, literally, nothing.)

Nor can we ask the rather more refined question 'Why is *this* universe (rather than *that* one) this way rather than that way?' because if this universe was 'that' way it would simply be 'that' universe' and not this one. It is not as if this universe were linked to the other ones by some medium, as for example parts of this universe are linked by space and time. If this universe were so linked to others, the universes would not really be several universes but simply parts of one universe. So, not being so linked, we should not be tempted to define 'this universe' as being the one which has a certain 'position' or 'location' within the linking medium (just as the Eiffel Tower, for instance, has a spatial location), and thereby claim that it would still be 'this' universe even if its characteristics had been otherwise, and thus after all be able to raise the 'why' question as to its characteristics (Why do they belong to this universe rather than that one?) Such a question just does not arise if there is no linking medium.

But the reader will observe that even if we have dispelled any mystery concerning the nature of any of the universes, including this one, there is still a mystery, but at a more refined level. For we have given no reason why all, or indeed any, of the possible universes are real. Out of the

https://doi.org/10.1017/S1477175609990017 Published online by Cambridge University Press

infinite number of degrees and combinations of properties which constitute the infinite number of possible universes, it does not involve any self-contradiction for only (say) five of them to be real, or (as is the normal assumption) only one of them to be real – this one. For 'being possible' and 'being real' are clearly different concepts, aren't they?

This is where the really interesting stage occurs in the present adventures of ideas. For what if (proposition P) they are not different concepts at all?!

Of course, unlike in mathematics or logic, philosophy does not require a proof for a proposition but simply strong rational grounds for holding it. I suggest there are two such grounds for P above:

1. Assuming not P, then although the situation of all possibilities being real is more symmetrical than only some being real, there is still the mystery as to why this symmetrical situation should hold, and any explanation seems ruled out in principle. The best effort would be to say that there is an ultimate explanation, which does not need explaining in turn and is its own explanation. Many would call this God, but many (indeed I think most philosophers) would find the idea of an explanation constituting its own explanation to be too obscure.

2. Proposition P solves the possible dilemma as to whether existence is a property, given a further condition which I shall come to shortly. Now, most philosophers think the dilemma is solved anyway. The dilemma (if it exists) is basically as follows: An object has various properties, e.g. blueness, hardness, roundness, and (some say) existence. But arguably (unlike with say the property of being bounded by three straight lines and the property of having angles that add up to 180 degrees) there seems no logical connection between the properties, by which I mean that any one of them can exist without the others, without self-contradiction, e.g. hardness without blueness or roundness or existence. On the other hand, an object cannot have any properties if it does not exist. That is the dilemma. Most philosophers think the dilemma is solved by

https://doi.org/10.1017/S1477175609990017 Published online by Cambridge University Press

realising that existing is not a genuine property. It is 'second level', or something to do with quantifiers. But some, including myself, think that is too hasty. As J.L. Mackie has said, existing does seem to be something that something does.

My preferred solution to the above dilemma is by means of proposition P. But the reader will quite rightly object that if 'exists' and 'is possible' mean the same, then that does nothing to solve the dilemma, since we just substitute 'exists/is possible' for 'exists', and the dilemma remains. However now we come to the further condition I mentioned at the start of the previous paragraph, namely that 'exists' and 'is possible' are not only the same but vacuous![1] Now we can no longer ask questions about existing, since there is nothing to ask such questions about.

But, you may well say, 'OK, let's accept that 'possibility' and 'actuality' are vacuous concepts, but, since there was no necessity for them to be (reasons 1. and 2. above are not conclusive reasons) then the fact that they are requires an explanation. So the task of this essay to bypass the need for an ultimate explanation has failed!

However I suggest the author can wriggle out of that objection in a subtle but still convincing manner: if 'possibility' and 'actuality' are vacuous concepts, then it is not meaningful to say they are not vacuous. (After all, to say they are vacuous is not just to say they are meaningful but happen to have no referent in the world.). Or rather, it is not meaningful to say they have anything to do with their alleged original meaning. (We can of course redefine them as meaning, say, 'table' and 'chair'.)

For even though at first there is a strangeness about the idea of existing being the same as being possible, let alone their both being vacuous, I suggest that the strangeness wears off the more we contemplate the matter. There are an infinite number of universes (combinations of properties), but the word 'are' in the above is misleading. All we can do is point. In the end, the idea can be strangely satisfying, and our universe becomes as necessary as '$2 + 2 = 4$'.

https://doi.org/10.1017/S1477175609990017 Published online by Cambridge University Press

It may be objected that 'possible' is not vacuous since its negation is not, since we can say a round square is 'not possible'. However, here 'not possible' is not referring to a metaphysical property nor to the absence of one. 'Not possible' simply means in this context that we cannot point to round square since we know that 'round' entails 'not square' and 'square' entails 'not round'.

Peter Lyth undertook his undergraduate and postgraduate studies at Leeds, and is presently a self-employed tutor.

Postscript

It should be noted that although the multiverse provides a full explanation of our universe, rendering an ultimate transcendent explanation/ultimate meaning unnecessary for purposes of explanation, nevertheless such a transcendent explanation or ultimate meaning, for our universe (and of course lots of others) is not incompatible with the multiverse. As has been pointed out, such an explanation is obscure, and certainly undefinable, but should not be ruled out on those accounts, and any knowledge of it may be a result of direct intuition.

Even if our universe has this transcendent nature, there would under the multiverse scheme still have to be another universe exactly the same except that it is without a transcendent nature and therefore without a (genuine) intuition of this nature.

The subject of intuition in general would require a separate article, but suffice it to say that, as Bertrand Russell said, in the end it is a case of deciding which of our instincts (no doubt including intuitions) to accept and which to reject.

Note that we are suggesting that our universe may be necessary for two entirely different reasons, but this does not seem to create any logical difficulty.

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