

Why is there something rather than nothing?

The basic hypothesis

The reason there is something rather than nothing is that facts like **two times two equalling four**^A or **five being prime**^B **have to be as they are**^C. **These can form patterns**^D, for instance the pattern of the prime numbers 3,5,7,11... Our universe is such **a pattern**^E and this is why it exists.

Reasoning

The argument **is basically guessing or**^F inference to the best explanation based on such evidence available:

The basic argument

- 1) Saying a creator made the universe leaves you to explain how **that**^G got there.
- 2) About the only way for things to be without cause is if **they have to be**^H.
- 3) About the only things that appear to be like this are mathematical **facts**^I like $2+2=4$

These are what philosophers might call logically necessary truths.

- 4) **These can form patterns**^J. For example the Mandelbrot set pattern looks like an intricate two dimensional pattern.
- 5) Our universe appears experimentally to obey mathematical laws and at the level of elementary point particles its behaviour fits well with mathematical laws and not much else.
- 6) The universe viewed as four dimensional space-time looks a bit like a mathematical pattern.
- 7) **So perhaps this is what it is and it exists by necessity in the same way that prime numbers do.**^K

The passage of time and consciousness

- 8) **The passage of time and freewill would work like in a movie – you can see it as unchanging or with time passing.**^L
- 9) Consider a pattern with **evolved life**^M within, say writing. From the time passing perspective it must be **conscious to write**^N but from the unchanging perspective the writing would be as it is as a logical necessity and so always have been so, implying the life would be conscious from its point of view as a logical necessity.

Multiverses and randomness

10) You could assume solutions would exist for all possible relationships and life in them would see them as reality and other solutions as abstract. This would form a multiverse and could explain why the constants in the laws of physics seem adjusted for life.

11) Quantum randomness would probably come down to the Everett “many worlds” view.

The problem appears highly constrained

12) You might guess that the reason for there being something rather than nothing would have to be something like a basic principle^O given the basic nature of the question.

13) The basic principle if correct should predict reality like we find it.

14) The guessing is constrained by the observations that necessary facts^P seem about the only things to have to be, these look like the facts of mathematics and not much else and the behaviour of the universe at the point particle level seems to fit with mathematical laws and not much else.

15) It's hard to see other options suggesting the idea is at least along the right lines.^Q

The relationship between necessary truths, mathematic and reality

In this scheme logically necessary facts would be all that exists^R.

Most of these seem mathematical in character. One could view mathematics partly as the study of such facts. If you look for example at the prime numbers the sequence has to be as it is by necessity we view it by calculation and working it out. The symbols 3,5,7,11... are human inventions^S but the underlying facts that five is prime and four are not and predate humans.

If you look at the Mandelbrot set pattern, it was discovered by Dr Mandelbrot but the underlying facts that the series he investigated diverges for certain values and does not for others is logically necessary. We view these facts and patterns by calculation using computers. You can look at a given bit of the Mandelbrot pattern and someone else can look at the same bit and you will both see the same pattern^T. The pattern is infinitely complicated so you can choose a bit that no one has looked at before.

If the universe is a mathematical pattern you could a^U s a kind of thought experiment, in principle but not in practice use computation to zoom in on a given part of our universe's space-time and see some evolved life form thinking it exists and that time is passing. For the life form the pattern would seem like reality.

The existence of prime numbers, the concept of a table and what is good

In this scheme prime numbers exist as necessities in that you can work them out^V. Large prime numbers exist in this way even if they do not exist as physical patterns of atoms in literature or peoples brains.

Things like the concept of a table would exist as a as physical patterns of atoms in peoples brains and literature .^W

What is good would like the table concept also exist as patterns of atoms but also experimentally seems to have a large component from evolution.

If the whole universe is necessary the ideas of table and goodness would effectively be so also but in an indirect way that differs for different people unlike things like the prime numbers that are the same for everyone.

Quantum randomness

It would seem likely if the hypothesis is true that at the quantum level all outcomes occur in the manner of the Everett **many worlds**^X interpretation. In this case our universe would be like an infinite dimensional object that merely looks four dimensional. The experimental evidence is a little unclear here.

A Comparison with Tegmark

The physicist Max Tegmark argues “If you believe in an external reality independent of humans, then you must also believe in what I call the mathematical universe hypothesis: that our physical reality is a mathematical structure”

I also argue the universe is a mathematical structure but do not agree that this follows automatically from there being a reality independent of humans. You could imagine a reality that was made by gods and spirits for example.

Phil's Comments

Green denotes fairly trivial issues (typos, spelling, grammar, etc.)

Yellow denotes more interesting points.

Red denotes the most philosophically interesting/important issues that we should devote time to.

(Hence, lots of red and no green could well mean a very interesting, well-produced piece.)

- A: Better expressed as '2x2=4'
- B: Ditto '5 is a prime number'
- C: Better to say 'are necessary truths'
- D: This needs a little tightening: do these necessary truths form patterns? Or rather, is it that mathematical patterns are describable in terms of these necessary truths?
- E: Better to say 'mathematical pattern'?
- F: Better to replace this with 'take the form of an...'
- G: Picky points, but better to say 'the creator'.
- H: Now that you've begun to spell the argument out nicely, this explicit premise is now open to challenge. (That's the virtue/integrity of analytical philosophy – making everything clear enough to be refuted, if it can be.) Some philosophers of religion will want to argue that it is part of God's divine attributes that he is *sui generis*. So you ought to say that you reject this as unsatisfactory.
- I: I would stick to a formulation in terms of truths. It helps with any treatments of necessary truths.
- J: Ditto point (D)
- K: I get the argument now! On another picky point, it would be nice to reiterate the conclusion you were explicitly aiming for. Something like: 'so that's why there's something rather than nothing.'
- L: Could be spelt out a little more. It's too compressed a thought a the moment. Perhaps give a movie example?
- M: I'm lost here?
- N: If you're saying what I think, this is a highly contentious claim within the philosophy of mind. Google 'zombies' from my customised search engine.
- O: Isn't everything going to hang on why the truths mathematics are necessary. And that will ground, metaphysically, any basic principles?
- P: Truths again.
- Q: Could add 'hence it's an inference to the best explanation' Note, apropos (H) above, you're implicitly claiming that it's a better explanation than the claim that God is *sui generis*. (I agree!)
- R: Hmmm. I wasn't expecting this. If all facts are necessary, then the contingent/necessary distinction itself appears to collapse. But don't you want to hang on to some contingent truths? Can you find a way of salvaging them?
- S: Should put symbols in quotes e.g. '3' if you're going to talk about them.
- T: Do you need 'underlying pattern' here?
- U: Comma here?
- V: Are you saying that it is part of what makes a truth necessary is that its truth is computable?
- W: We need to talk a little about Frege's important, and very interesting, distinction between sense and reference. It determines what you mean by 'concept'.
- X: Hyphenated?