

ORIGINAL ARTICLE

Is the cosmological argument intuitive?

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Abstract

The cosmological argument for the existence of God seems to have significant intuitive resonance. According to a familiar version of the cosmological argument, there must be *some* explanation for why the universe exists, and God provides the explanation. This argument seems to depend on the Principle of Sufficient Reason (PSR), according to which, if something exists, there must be an explanation for why it exists. As we detail, recent evidence indicates that people presuppose something like the PSR in their explanatory outlook. However, the other key part of the cosmological argument is that God is supposed to be self-explanatory – God’s existence is necessary. We examine this empirically and find that people do not generally think that the existence of God is necessary in the sense relevant for the cosmological argument.

Keywords: principle of sufficient reason; cosmological argument; God; explanation; experimental philosophy

Introduction

The cosmological argument is a towering argument for the existence of God. The core idea of the cosmological argument, very roughly, is that there must be *some* explanation for why the universe exists, and God provides the explanation. The modern cosmological argument depends on a presumption about the necessity of explanation, the Principle of Sufficient Reason (PSR), according to which (again roughly), if something exists, there must be an explanation for why it exists.

In contemporary psychology, there has been excellent work bearing on the intuitiveness of the design argument for the existence of God (see, e.g., Evans 2000; Kelemen 2004). But there’s been much less work on the cosmological argument. There is an excellent tradition of work on explanation in children. As Helen de Cruz and Johan de Smedt note, developmental work reveals that even babies expect events to have causes, with a preference for agents as causes, and older children spontaneously seek causal explanations (2017, 63–64, 77; see also De Cruz and De Smedt 2014). De Cruz and de Smedt suggest that this early emerging focus on cause and causal explanation contributes to the persuasive power of the cosmological argument. We propose to interrogate more directly the psychological underpinnings of the cosmological argument.

Unlike the ontological argument, the cosmological argument seems easy to convey to nonspecialists. In this article, we empirically examine the extent to which the cosmological

argument is intuitive. We start by sketching a classic version of the argument. Two key features of the argument are: (1) it depends on the PSR and (2) it concludes that the existence of God is necessary. Recent evidence indicates that the PSR is intuitive in an important sense – people seem to presuppose something like the PSR in their explanatory outlook. Here we empirically explore judgements about the necessity of the PSR and of God's existence. We find that people do not seem to regard the PSR as necessary, and we will consider a way in which this result alone might be thought to considerably weaken the cosmological argument. We also find that people do not generally think that the existence of God is necessary in the sense relevant for the cosmological argument.

The cosmological argument

Prominent versions of the cosmological argument are grounded on a Principle of Sufficient Reason (PSR).¹ According to a simple version of the PSR, if something exists, there must be an explanation for why it exists (e.g., Melamed and Lin 2023; Pruss 2006; Rowe 1975; for a somewhat different model, see Dasgupta 2016). This might apply to both entities and events, yielding the following:

PSR: There has to be an explanation for every entity that exists and every event that occurs.

The core idea that ends up motivating the cosmological argument is that there *has to be* some explanation for the existence of the universe. There is then a further question of whether God could provide an adequate explanation.

Historically, many philosophers have thought so (including Aquinas, al-Ghazali, Leibniz, and Samuel Clarke). Here's a representative version of the standard cosmological argument from Émilie Du Châtelet:

All that exists has a sufficient reason for its existence. The sufficient reason for the existence of a being must be within it, or outside it. Now the reason for the existence of a contingent being cannot be within it, for if it carried the sufficient reason for its own existence, it would be impossible for it not to exist, which is contradictory to the definition of a contingent being. So the sufficient reason for the existence of a contingent being must necessarily be outside of it, since it cannot have it within itself. This sufficient reason cannot be found in another contingent being, nor in a succession of such beings, since the same question will always arise at the end of this chain, however it may be extended. So it must come to a necessary Being that contains the sufficient reason for the existence of all contingent beings, and of its own, and this Being is God (Du Châtelet, 2009 §19).

The argument can be summarized as follows:

1. For anything that exists there has to be an explanation for why it exists (PSR).
2. The explanation for the existence of a thing must be either internal or external.
3. Contingent things exist (implicit premise).
4. The explanation of a contingent thing must be external to the thing (Def: contingent being).
5. It is not the case that all things are contingent, or that each thing's existence can be explained externally, on pain of an infinite regress.

6. Therefore, there must be something whose existence is explained internally, that is, whose existence is necessary. That being is God.

The idea of something whose existence is explained internally can be illustrated with an example from mathematics. If we ask why a triangle has three sides, the answer will be internal: it is part of the very definition of a triangle that it is a three-sided figure. If it didn't have exactly three sides, it wouldn't be a triangle. Similarly, if God is a necessary being, as the cosmological argument maintains, the reason for God's existence also be internal: the very concept of God, or God's essence, entails God's existence.

While one might wonder about what licenses the inference from the existence of a necessary being to the conclusion that God exists, Du Châtelet's reasoning is quite conventional here: God just is a necessary being or a being for whom existence is a part of its essence. Indeed it is precisely because cosmological arguments like this one turn on the concept of God as a necessary being that Kant reasons that cosmological arguments (like *all* arguments for God's existence on his account) hinge on the very same dubious claim that grounds the ontological argument: that existence is a predicate or that we can meaningfully talk about a being whose existence is necessary.² Regardless of what one thinks of the merits of Kant's critique, he seems to be right that a representative model of the cosmological argument turns on a conception of God as a necessarily existing being.

This is a very simple version of the argument, but it is sufficient for the issues we want to explore. The argument is valid. And the premise that does the heavy lifting is #1, the PSR. Many philosophers have thought that if (a sufficiently strong version of) the PSR holds, the argument is sound (Rowe 2007, p. 32). It's hard to see how to argue for the PSR (though see Della Rocca 2010 for a valiant effort). Even if there is no direct proof of the PSR, it might be that we all presuppose some version of the principle (for indirect proofs of the PSR, as a first principle, see Du Châtelet, 2009 §8). That would provide some reason to favour the cosmological argument. As Rowe writes, 'If it were shown ... that ... we all... *presuppose* PSR to be true, then... to be consistent we should accept the Cosmological Argument' (2007, p. 32). However, Rowe goes on to claim, 'no one has succeeded in *showing* that PSR is an assumption that most or all of us share' (2007, p. 32). As we will see below, there is now evidence that suggests that the PSR is indeed an assumption that most of us share.

The PSR premise

There are important precedents in developmental psychology for examining the PSR. Developmental psychologists have suggested that young children have an abiding drive for explanation (e.g., Gopnik 1998; Liquin et al. 2020; Woolley and Cornelius 2017). However, this work falls short of showing that people accept PSR. One critical limitation of much of the extant work is that it merely demonstrates that children expect there to be explanations for events and things. But the PSR is committed not just to the *expectation* of an explanation, but to the *necessity* of an explanation. Indeed, this is critical to the force of the PSR in the cosmological argument.

Across several studies, there is now evidence that people do presuppose something like the PSR in their reasoning about explanations. One kind of evidence comes from asking people whether they agree with a statement like the following:

For anything that exists there has to be an explanation for why it exists.

In several studies, adults indicated that they agree with this claim (Partington et al. 2023).³

It's one thing to agree with a general statement of the PSR, but there is a further question of whether something like the PSR is assumed in judgements about specific facts. Partington and colleagues also ran studies asking about particular events or facts.

Participants were first presented with some fact, for example, ‘balloons lose helium’, and asked whether they agreed with the claim. If they indicated agreement, they were then asked to indicate agreement on *the metaphysical explanation claim*:

There must be an explanation or reason why [balloons lose helium].

If participants embrace the PSR in their judgements, they should agree with such statements that there must exist an explanation. And participants do agree with such metaphysical explanation claims. Further studies show that these judgements diverge from related epistemic judgements. For instance, participants were given statements like the following:

Metaphysical: There must be an explanation or reason why [ancient people built the monuments at Stonehenge].

Epistemic: It is possible for us to know why [ancient people built the monuments at Stonehenge].

Participants gave stronger agreement for the metaphysical claims than for the epistemic claims. In effect, participants were saying that there has to be an explanation even though we might never know what it is. Judgements about the necessity of explanation also diverged from judgements about the value of a (given) explanation. For instance, when shown a picture of a smiling woman with a dog, participants agreed that there must be some explanation for why ‘this woman enjoys holding this dog’, but they also tended to give low scores regarding the *value* of such an explanation.⁴

These results generalize in important ways. In further studies, participants were presented with facts that were randomly sampled from Wikipedia entries, and once again, participants tended to give PSR-conforming answers. Young children also tend to make PSR-conforming judgements (Flanagan et al. [under review](#)). In addition, PSR-conforming judgements were found in a sample of adults in New Delhi who had little or no formal education (Nichols, unpublished data).

Above, we noted Rowe’s speculation that perhaps ‘PSR is an assumption that most or all of us share’ (Rowe 2007, p. 32). There is now suggestive evidence that something like the PSR is indeed an assumption that most of us share. Thus, this might provide grounds for thinking that the cosmological argument is indeed intuitive.

Does God require an explanation?

As we’ve reviewed, there is a growing body of evidence that people make judgements that conform to the PSR. However, it’s important to consider whether there might be limitations in the scope of the PSR. People tend to agree with the global PSR statement, but perhaps they are failing to consider phenomena that they would in fact regard as not requiring an explanation. Perhaps God or the universe are things for which people do not think there has to be an explanation. So this requires direct attention.

In fact, there is some evidence that people’s metaphysical explanation judgements are sensitive to domain. People are less likely to agree that there must be an explanation when it comes to moral and (especially) aesthetic claims (Vesga et al. [under review](#)). In light of this, it’s important to see whether God’s existence itself falls outside of the PSR presupposition. Do people think that the existence of God is just a brute fact? If so, then the standard cosmological argument would have no intuitive foundation since God would fall outside the ambit of the PSR. In the studies reviewed above, the existence of God was among the items. Because many participants don’t believe in God, it’s important to use a ‘piped’ design in

which participants are only asked the metaphysical explanation question about God's existence if they first indicate agreement on the existence of God. Hence, the design was as follows. First, participants were asked a 'Truth' question:

Truth: Please rate your agreement with the following:
God exists.

Those who agreed with the statement, received the metaphysical explanation and the epistemic questions:

Metaphysical: Please rate your agreement with the following:
There must be an explanation or reason why God exists.

Epistemic: Please rate your agreement with the following:
It is possible for us to know why God exists.

People tend to think that there has to be an explanation for why God exists. They also tend to agree that there has to be an explanation for why Stonehenge was built, and why the universe exists. And these judgements diverge from the epistemic judgements. Participants are more likely to think there must be an explanation for each of these than they are to think that it's possible for us to know what the explanation is (Partington et al. 2023, 7). Thus, while there might be some sensitivity to domain in participants' PSR-conforming judgements, the vast majority of participants think that the existence of God and the existence of the universe are not brute facts – they have to have explanations.

Necessity judgements, study 1a

Thus far, we have found that key elements of the cosmological argument seem to be intuitive. People's judgements broadly conform to the PSR, and God's existence is no exception – like the existence of Stonehenge and the universe, the existence of God must have an explanation. But another important part of the argument concerns the conclusion, according to which God is a necessary being, that is to say, a being whose existence is explained internally. Even if the PSR is part of commonsense, that doesn't mean that the idea of a necessary being is intuitive. To investigate this, we ran a study in which we asked participants for judgements of necessity regarding God's existence as well as the PSR. For comparison, we also asked about a case that philosophers think is a necessary truth: $1 = 1$.

Methods

Participants

200 Prolific US participants were recruited, 101 male, 94 female, 5 participants indicated 'other' or preferred not to answer. Mean age = 38.1. We excluded participants who failed a simple attention check, leaving 187 participants for analysis.

Materials and procedure

All participants were given all questions in a within-subjects design. We asked for necessity judgements regarding the existence of God, the PSR, and $1 = 1$, randomly presented in different orders. The necessity statement was framed negatively, in terms of the possibility of a universe where God doesn't exist ($1 \neq 1$, PSR doesn't hold). An example of the procedure is as follows:

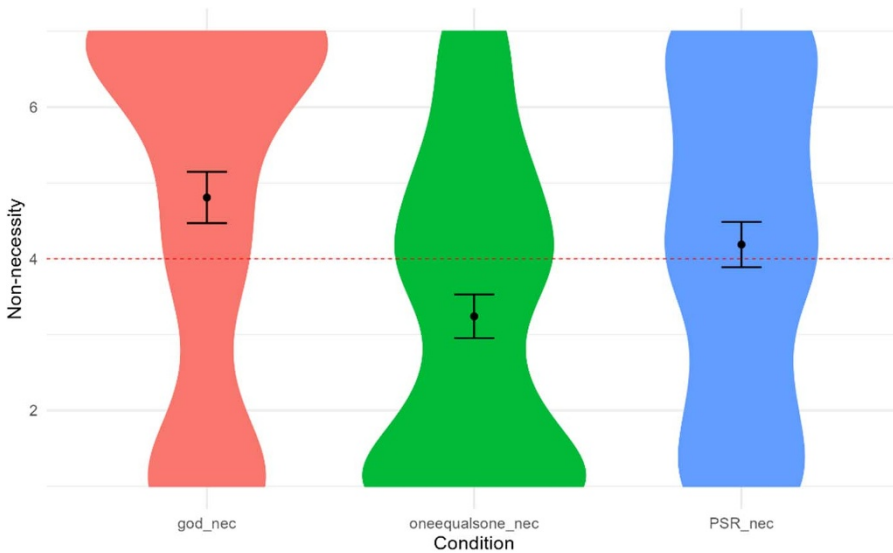


Figure 1. Error bars represent confidence intervals; dotted red line is scale midpoint.

Do you agree with the following claim:

God exists.

To what extent do you agree with the following statement:

There could there be a universe where God **doesn't** exist? (1= strongly disagree; 7 = strongly agree).

For the other two cases, 'God doesn't exist' was replaced with ' $1 \neq 1$ ' and 'There could there be a universe where for some things, there is no explanation for why they exist.'

Results

Participants were significantly more likely than chance to disagree that there could be a universe where $1 \neq 1$ (one sample $t(186) = -5.16$, $p < .001$). This provides some reason to think that the measure is not completely off base. However, participants were significantly more likely than chance to agree that there could be a universe where God doesn't exist (one sample $t(186) = 4.68$, $p < .001$). For PSR, participants were no more likely to judge the PSR as necessary than would be expected by chance (one sample $t(186) = 1.2246$, $df = 186$, $p = 0.2$). (Average judgements were slightly but non-significantly on the side of it being possible for there to be a universe where PSR is false.) (See Figure 1).

Thus, we have some initial evidence that the cosmological conclusion is not intuitive. We will examine this further (see sections 6 and 7), but first we want to consider the potential significance of the results on necessity judgements regarding the PSR.

Interlude: on the necessity of the PSR

The previous result suggests that people do not regard the PSR as necessary. At first glance, it might seem that the cosmological argument does not depend on the necessity of the PSR; it is sufficient for the PSR to be actually true. (For a philosophical defence of a weak version of the PSR that might well capture what people are committed to, see Builes

unpublished.) Still, one might worry that a modally weak version of the PSR would weaken the cosmological argument.

Here's one such worry. The cosmological argument turns on the need for explanations for contingent things, positing a necessary being (God) as the ultimate stopper of an explanatory regress. But if brute facts are even possible, then the explanatory demand that leads one to posit an explanatory regress stopper seems to be weakened. For any contingent thing, the mere possibility that it could exist brutally or without an explanation, even if as a matter of fact it has an explanation, is enough to weaken the explanatory demand that drives one to posit God as a necessary being.

Put somewhat differently, if there are possible worlds where the PSR does not hold, then there are possible worlds where there is no need to posit God as an explanatory regress stopper. Arguably, what is distinctive about the necessary being in the cosmological argument, what distinguishes it from the necessary being of the ontological argument for instance (*pace* Kant), is that it is a *necessary being whose existence grounds the existence of contingent things*. A world with ungrounded, unexplained things is a world in which God, so conceived, need not exist. But the concept of God that is posited in the cosmological argument is, arguably, a being that *must* exist in all possible worlds, that must ground all contingent things.

To be sure, it does not follow from this that God does not exist in a world where the PSR does not obtain. But it does suggest that the considerations that, in the cosmological argument, lead one to posit the existence of God in this world do not apply in all possible worlds. Minimally, then, one would need to bring in auxiliary considerations beyond the simple version of the cosmological argument in order to show that God must exist in all possible worlds, since the weak PSR alone will not suffice. For instance, one might argue that if God exists as the ultimate regress stopper in *any* world, then God must exist in *all possible worlds*, since the concept of God is the concept of a necessary being, and a necessary being must exist in all possible worlds. But is this how people think about the concept of God? That is the question to which we will now turn.

Is God's existence regarded as necessary?

The conclusion of the cosmological argument isn't simply that God exists. For the existence of God requires an explanation, and the cosmological argument only succeeds if God's existence has an internal explanation. Otherwise we need an external explanation for God's existence, and then we have given up on the cosmological argument (see Hume's *Dialogues Concerning Natural Religion*, esp. Part IV). Hence it's crucial that the conclusion of the argument is that God's existence is explained internally, that is, that God's existence is necessary. Here again is that conclusion:

Therefore, there must be something whose existence is explained internally, that is, whose existence is necessary, that being is God.

Thus, the cosmological argument won't count as intuitive unless this conclusion is also intuitive. In particular, the argument is only intuitive if people naturally think that God's existence is necessary. Do they?

Is God's existence regarded as necessary by theists?

In section 4, we reported our initial study on necessity judgements. Participants were asked the extent to which they agreed with the statement:

There could there be a universe where God **doesn't** exist.

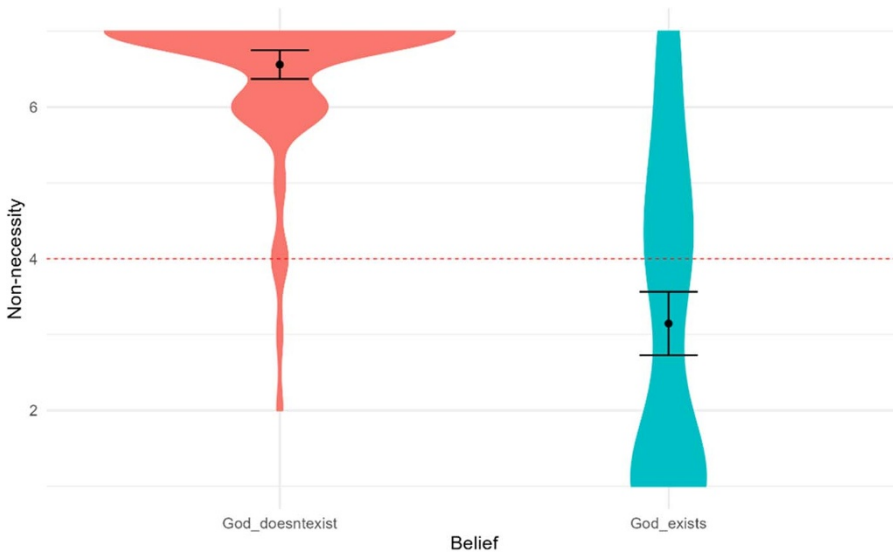


Figure 2. Necessity of God, by belief. Error bars represent confidence intervals; dotted red line is scale midpoint.

We found that overall, our participants did not regard God's existence as necessary. However, many of these participants didn't even believe that God exists in *this* universe. So we wanted to compare the necessity judgements of those who do believe that God exists with those who don't.

Results

Participants who professed a belief in God's existence were significantly more likely to disagree with the claim that there could be a universe where God doesn't exist ($t(132) = -14.568, p < .001$). Nonbelievers, as one would expect, don't think God is necessary at all (one sample $t(37) = 20.65, p < .001$). Believers tend to affirm God's necessity (or deny non-necessity) (one sample $t(54) = -4.2387, p < .001$) (see Figure 2).

Is God's existence regarded as necessary? Study 1b

To corroborate these findings, we designed a slightly different measure of necessity.

Methods

Participants

201 Prolific US participants were recruited, 102 male, 97 female, 2 participants indicated 'other' or preferred not to answer. Mean age = 35.15. We excluded participants who failed a simple attention check, leaving 180 participants for analysis.

Materials and procedure

All participants were given all questions in a within-subjects design. Participants were first asked to make necessity judgements regarding the existence of God and $1 = 1$. They received the following questions, randomized for order:

To what extent do you agree with the following statements:

It's impossible for there to be a universe where God doesn't exist.

It's impossible for there to be a universe where $1 \neq 1$.

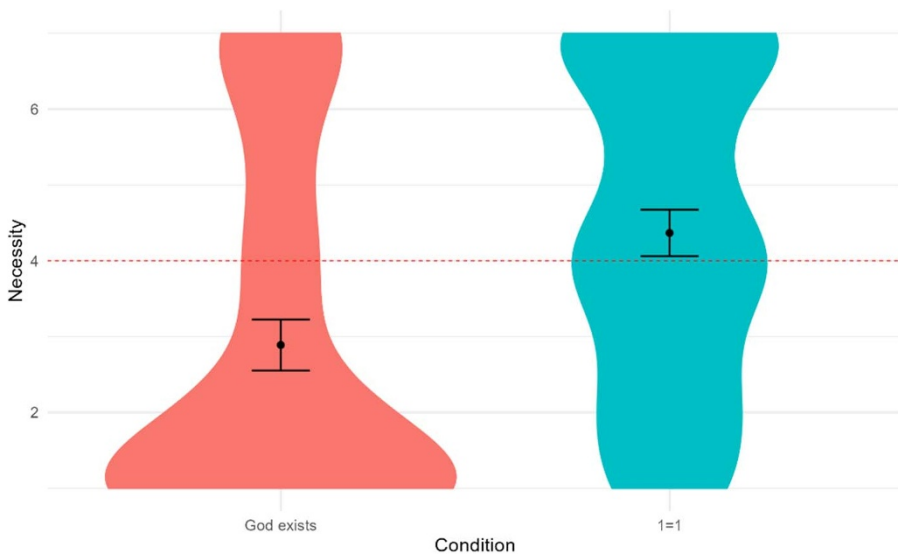


Figure 3. Error bars represent confidence intervals; dotted red line is scale midpoint.

Responses were given on a 1 (strongly disagree) to 7 (strongly agree) scale. After participants had responded to the necessity question, we asked about their beliefs with the following prompt:

Do you agree with the following claims:

God exists.

1=1

Results

Again, we get sensible responses on $1 \neq 1$. People tend to agree that it's impossible for there to be a universe where $1 \neq 1$ (one sample $t(179) = 2.35$, $p < 0.05$). People also tend to disagree that it's impossible for there to be a universe where God doesn't exist (one sample $t(179) = -6.49$, $p < 0.001$) (see [Figure 3](#)).

As in study 1a, we also examined responses broken down by belief in the existence of God. As expected, people who deny the existence of God overwhelmingly tend to deny that it's impossible for there to be a universe where God doesn't exist (one sample $t(98) = -14.85$, $p < .001$). By contrast, people who affirm the existence of God gave significantly higher judgements of the impossibility of a universe where God doesn't exist ($t(138) = 9.1046$, $p < .001$). The average rating among those who affirmed belief in God was above the scale midpoint, although not significantly so (one sample $t(80) = 1.44$, $p = .15$) (see [Figure 4](#)).

What explains God?

So theists do tend to affirm the necessity of God. But it is a further question whether their judgements of necessity conform to the kind of necessity we find in the conclusion of the cosmological argument. In particular, when theists say that there couldn't be a universe where God doesn't exist, is this because they think that God's existence must be explained 'within itself' to use Du Châtelet's language? If God is a necessary being in the

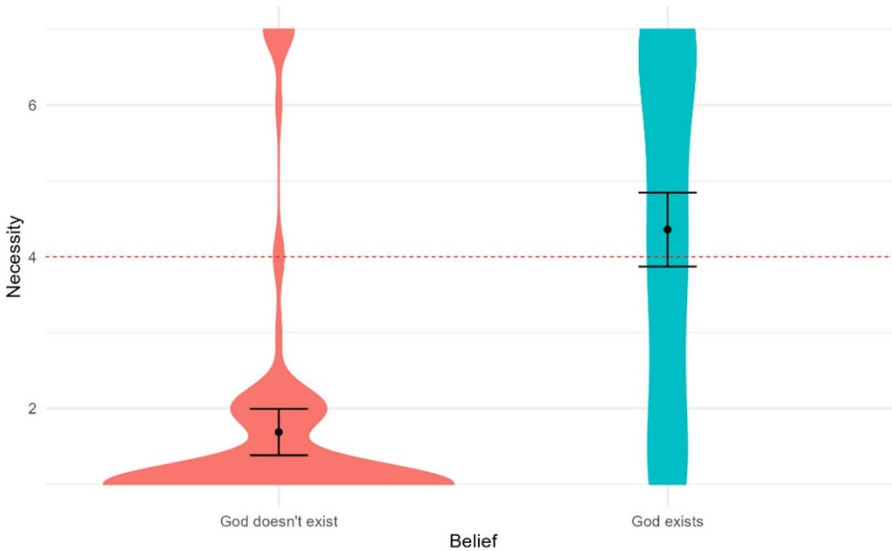


Figure 4. Necessity of God, by belief. Error bars represent confidence intervals; dotted red line is scale midpoint.

way that the standard version of the cosmological arguments supposes, the explanation of God's existence should not appeal to anything outside of or external to God, since external explanations would make God contingent on something else.

Study 2a

Methods

Participants

120 Prolific US participants were recruited. 60 female, 59 male, one participant indicated 'other' or preferred not to answer. Mean age = 38.48. Half of the participants (those in the God condition, see below) were drawn from a population restricted to those who had a registered religious affiliation of Christianity, Islam, or Judaism.

Materials and procedure

This was a between-subjects study with two conditions (God, 1 = 1). In the God condition, participants were given a question regarding the necessity of God's existence. Those who affirmed necessity were then asked to explain why they think God's existence is necessary. The exact wording was as follows:

To what extent do you agree with the following statement:

It's impossible for there to be a universe where God **doesn't** exist.

Participants answered on a 1–7 scale. If they indicated agreement with the necessity statement, they were then given the Explanation question:

Why do you think it's impossible for there to be a universe where God doesn't exist?

Responses were given in a text box. In the 1 = 1 condition, everything was the same except 'God doesn't exist' was replaced by '1 ≠ 1'. For coding the responses, we used the following coding scheme:

external explanation of x: appeals to something outside of x to explain why x is necessary
 internal explanation of x: appeals only to the nature or concept of x in order to explain why x is necessary

Both authors coded responses independently and resolved the few disagreements through discussion. Responses that were either unclear or not relevant were excluded.

Results

For the God condition, 13 of the responses were either irrelevant or unclear. Of the relevant responses, 1 was partly internal ('I totally believe that God exists and just can't imagine that a God doesn't exist ...'), all of the rest (24) were external (e.g., 'Who made the universe then?', 'I look around me and realize all of this had to come from somewhere. It had to all be created by a higher power', 'Because I feel that something came from something, not nothing. Motion was created by something'). For the $1 = 1$ condition, the situation was quite different. Seven of the responses were either irrelevant or unclear. Of the relevant responses, one was borderline external ('It would defy the laws that bind everything we know'), all of the rest (24) were internal (e.g., 'Probably because I don't think that there can be a universe in which there is a logical inconsistency ...', 'I mean ... one is equal to one just like how a male is well ... a male. You can't really make it not equal when it is the same thing', 'If one doesn't equal one then the concept of one is meaningless'). See [Appendix 1](#) for the complete set of responses and coding.

Thus, overall, we find little evidence that theists think the explanation for God's existence is necessary, as measured by whether the explanation is internal to the nature of God. It's not that people never give necessitarian explanations – we found that most participants did give such explanations for why there couldn't be a universe where $1 \neq 1$. Nonetheless, they did not produce necessitarian (i.e., internal) explanations for God's existence.

Study 2b

The previous study provided no evidence that people think that God's existence is necessary. Indeed, participants' explanations for why they said it was impossible for there to be a universe where God doesn't exist were strikingly different from participants for why they it was impossible for there to be a universe where $1 \neq 1$. In the next study, we ask directly for an explanation for God's existence, in the context of the PSR. Theists generally say that there has to be an explanation for God's existence. What kind of explanation do they think there is? In particular, do theists tend to think that the explanation for God's existence is internal or external?

Methods

Participants

102 Prolific US participants were recruited, 48 male, 48 female, 6 participants indicated 'other' or preferred not to answer.⁵

Materials and procedure

All participants were asked the *Truth question*:

To what extent do you agree that God exists? (1 – strongly disagree to 7 – strongly agree.)

If the participant 'agrees' (response of 5, 6, or 7) with the Truth question, then they receive the *PSR question*:

To what extent do you agree with the following statement?

There must be an explanation for why God exists, even if we cannot know it.

If participant 'agrees' (response of 5, 6, or 7) then they receive the *Explanation question*:

You agreed that there must be an explanation why God exists.

What do you think such an explanation might be?

Then they are told either to write out an explanation or select 'I have no guesses.'

The explanations were coded using the same coding scheme as in study 2a.

Results

Thirty-six participants agreed with the Truth question and with the PSR question. These thirty-six participants received the question of interest, the *Explanation question*. Among these, eighteen selected 'I have no guesses.' The other eighteen offered explanations.

Among the explanations, five were either irrelevant or unclear (e.g., 'God is love'). Of the relevant responses, most eleven were external (e.g., 'The complexity, order, and purposefulness observed in the universe suggest an intelligent designer', 'I don't believe it all started with a big bang if nothing was here before. There must be something greater that created us all. Not just a few molecules crashing together'). There were two cases that might be internal explanations, though the explanations were not sufficiently explicit to be sure ('God is eternal. He always existed. The beauty of creation shows that there is a Creator.' 'God has always existed and exists outside of time or the understanding of man'). See [Appendix 2](#) for the complete set of responses and coding.

As with study 2a, we find very little indication that people think God's existence has an internal explanation of the sort that is critical to the conclusion of the cosmological argument.

Study 2c

The previous studies indicate that theists do not invoke the kinds of internal explanations that one would need to 'complete' the cosmological argument. Rather, the vast majority of the explanations are external. Of course, this does not necessarily mean that theists are not committed to the conclusion. One explanation for why the reasons cited to justify God's necessary existence are external is that respondents were in fact merely citing the reasons they have for *believing* in God's necessary existence. So in our final study, we tried to isolate the question further, to minimize explanations for theistic belief. We asked, 'If God explains why the universe exists, what do you think explains why God exists?' The goal was to force participants to reckon directly with the metaphysical question.

Methods

Participants

Fifty Prolific US participants were recruited. Participants were drawn from a population restricted to those who had a registered religious affiliation of Christianity, Islam, or Judaism. Twenty-three of the participants were female, twenty-six male. Mean age = 38.8. One participant was excluded for failing to provide an answer to the test question, leaving forty-nine total participants.

Materials and procedure

All participants were asked a single question:

'If God explains why the universe exists, what do you think explains why God exists?'

We used a binary coding procedure for the responses. Responses were coded either as providing an internal explanation for God's existence or not providing such an explanation. As in studies 2a and 2b, an internal explanation for the existence of God is one that appeals only to the nature of God to explain God's existence.

Results

In this study, we tried to encourage participants to focus closely on the issue of the metaphysical explanation for God's existence. Nonetheless, we found very few participants offering an internal explanation for God's existence. There was one participant who actually stated the philosophical view that God's existence is necessary ('Some theological and philosophical traditions posit that God exists necessarily, meaning that God's existence is not contingent on anything else but is internal to God's nature. In this view, God's existence

is seen as self-explanatory and not requiring an external cause'). There were two further explanations that might have been internal explanations although the content wasn't not sufficiently explicit to render a clear verdict (e.g., 'God has always existed. God is without any beginning and without any end, because God is beyond time and space'). However, the vast majority of the forty-nine responses were clearly not internal explanations of the existence of God. See [Appendix 3](#) for the complete set of responses and coding.

There was considerable diversity in the responses. When faced with the question, some subjects seemed to give up on the idea that there is an explanation (e.g., 'God doesn't have a reason for existing. He just is'; 'I don't think there is anything that provides a good explanation of why god exists'). Despite the question explicitly discouraging an external explanation, many participants seemed to give those (e.g., 'Without the existence of God nothing would be here not even human'). Some participants gave teleological answers ('God exists to give purpose and guidance to people'). And several participants said that they didn't know (e.g., 'That is an extremely deep question that I cannot answer with conviction'; 'This is an excellent question, I've never thought of. I'll get back to you later on this'; 'I am still trying to figure that out').

General discussion

The PSR grounds a prominent version of the cosmological argument. According to the PSR, there has to be an explanation for every entity that exists and every event that occurs. According to the cosmological argument, the existence of a necessary being – God – is required to stop what would otherwise be an infinite regress of explanations. Although there is evidence that the PSR itself is intuitive, we find little evidence that people think that the existence of God is necessary in the sense relevant for the cosmological argument. This suggests that the cosmological argument is not intuitive after all. The PSR might play a role in religious belief. People do think that there has to be some explanation of the existence of the universe. But they do not seem to reach the conclusion that the existence of God has an internal explanation.

Does this refute the cosmological argument? Of course not. One possibility is that the argument is sound, just not intuitive. This is what Aquinas actually says. Aquinas maintains that the existence of God is self-evident, for 'the predicate is the same as the subject'. However, the fact that God's existence is self-evident is not transparent to us: '*because we do not know the essence of God, the proposition is not self-evident to us*'; but needs to be demonstrated by things that are more known to us, though less known in their nature – namely, by effects' (Summa Theologica First Part, Question 2, Aquinas 2014, *emphasis added*). If this is right, existence might pertain to the essence of God, so that there would be an internal explanation for God's existence that would stop the regress, even though this is not part of the folk understanding of God, even among believers. This, however, faces the standard suite of challenges confronting ontological arguments (see Kantian critique above).

An alternative way to think about our findings is that they reflect a deep problem about the PSR. The PSR pushes us to expect that there is an explanation for the universe. But the PSR also seems to leave us unsatisfied by any starting point, including God. It might be that the PSR drives us into an inherently unsatisfying position. The buck has to stop somewhere, but the PSR keeps pressing us to explain whatever the last buck is.

The worry that the PSR might leave us ultimately intellectually unsatisfied finds expression in Hume's *Dialogues Concerning Natural Religion*. In Part IV, Philo, commonly regarded as the mouthpiece for Hume's own skeptical thinking, challenges Cleanthes' version of the argument from design, which also turns on the PSR. Here, Philo argues that if one requires a cause for the world, and one takes the cause to reside in the 'ideal' or 'mental world' of a designer, then this 'mental world or universe of ideas requires a cause as much as does a material world or universe of objects'. The PSR demands that we

trace that ideal world into another ideal world, or new intelligent principle[.] But if we stop, and go no farther; why go so far? Why not stop at the material world? How can we satisfy ourselves without going on in infinitum? And after all, what satisfaction is there in that infinite progression? Let us remember the story of the Indian philosopher and his elephant. It was never more applicable than to the present subject. If the material world rests upon a similar ideal world, this ideal world must rest upon some other; and so on, without end (*Dialogues*: 38).

Philo concludes that we should abandon the quest for causes for the material world and confine our causal inquiries to cases of observed phenomena.

Another version of the worry, and a somewhat different response, comes from Kant. For Kant, phenomena or objects of possible experience, are necessarily subject to the law of causality (Kant 1998: A189/B232–A211/B256). Indeed, the proposition that every event has a cause is a paradigm case of a synthetic a priori truth for Kant. However, he also thinks that when we apply the principle of sufficient reason beyond the bounds of experience, seeking the unconditioned grounds of all conditioned phenomena, we are driven to posit ‘transcendental’ ideas – of God, soul, and world – that have no objective validity (KrV: A312/B369–A338/B396). Indeed, pure reason, pushed beyond the realm of objects of experience, results in contradiction (KrV: B xx, B xxv). Kant, then, gives us a principled basis for restricting the PSR to objects of experience, while also recognizing the ineliminable drive to extend beyond these limits in the quest for intellectual satisfaction.

Perhaps there is an important lesson to be drawn from Hume’s and Kant’s attempts to restrict the demand for explanation. The (unrestricted) PSR drives us to think there has to be an explanation for the universe, or that there has to be a reason why there is something rather than nothing. And yet, intuitive as this explanatory demand might be, these studies seem to show that there is no similarly intuitive way to satisfy this demand, since we typically seek external explanations for the existence of entities, including God. If we are to hold fast to the PSR, we must: (a) insist that, contrary to ordinary intuitions, God’s existence is internally explained; (b) embrace an infinite regress of explanations; or (c) allow for symmetrical dependencies between explanantia and explananda (see respondents who claimed *both* that God explains the universe and the universe explains God). Alternatively, we might, following Hume and Kant, restrict the explanatory demand to objects of possible experience. This is likely to be a bitter pill to swallow not just for theists, but also for atheists who are committed to a fully grounded naturalist metaphysics. And yet it might be the least unpalatable option.

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Notes

1. There are other versions of the cosmological argument (see Reichenbach 2024), but we focus on a prominent version, based in the PSR. For convenience, we will label this as the *standard* cosmological argument, though we recognize that there are other prominent variations that deviate from this model in important ways.

2. Here’s Kant on the cosmological argument: ‘If something exists, then an absolutely necessary being also has to exist. Now I myself, at least, exist; therefore, an absolutely necessary being exists’ (KrV A604/B632). Since the cosmological argument turns on an absolutely necessary being, and ‘absolute necessity is an existence from mere

concept ... it is really only the ontological proof from mere concepts that contains all the force of proof in the so-called cosmological proof' (A607/B635).

3. Participants judged (and agreed with) four different kinds of general statements (Partington et al. 2023, 5):

'To what extent do you think there has to be a reason for anything that happens?'

'To what extent do you think there has to be an explanation for anything that happens?'

'To what extent do you think that for anything that exists there has to be a reason for why it exists?'

'To what extent do you think that for anything that exists there has to be an explanation for why it exists?'

4. The value questions were as follows (Partington et al. 2023, 9):

Normative: We should try to answer why [this woman enjoys holding this dog].

Value: It would be good for us to know why [this woman enjoys holding this dog].

Motivational: It would be worth the effort to find out why [this woman enjoys holding this dog].

Normative: We should try to answer why [this woman enjoys holding this dog].

Value: It would be good for us to know why [this woman enjoys holding this dog].

Motivational: It would be worth the effort to find out why [this woman enjoys holding this dog].

5. Age wasn't measured in this study due to an error in the survey.

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Appendix I: Complete coding and responses for Study 2a

Cond	Coded	Item	Complete open response
God exists			
	E	1	Who made the universe then?
	E	2	I look around me and realize all of this had to come from somewhere. It had to all be created by a higher power.
	E	3	Because I feel that something came from something, not nothing. Motion was created by something.
	U	4	Because God created all things, including the universe, and He sustains all things.
	E	5	I believe in intelligent design.
	E	6	I think that there is far too much innate detail for there not to have been a creator. I think it is unreasonable to believe that everything that exists just came out of nothing.
	E	7	How else would we have gotten here? It's much too perfect to have happened on it's own.
	N	8	Because God created the Universe.
	N	9	I disagree. I do believe it's possible where a universe without God exists. Because the extent of the universe if unexplored. It's hard to say other planets don't have other ideologies.
	E	10	To believe that everything in existence is here because some cells and molecules got together in a little pool is absurd. Where did they come from? How did the other planets come to be? It is the only explicable reason, and the Bible lays it all out for us. My experiences and faith are enough, some people need to disprove the beliefs of people such as myself, but I am content with God as creator.
	N	11	I feel like there has to be a creator.
	E	12	Because of how well beings work. There has to be an inventor of us.
	E	13	Based on what we see around us, there has to be a reasoning for things to occur the way they do.
	E	14	I believe that God created the universe. The universe requires God.
	E	15	The universe is too complex and things can not be created from nothing.
	N	16	Faith. It's hard to explain, so I would chalk it up to faith.

(Continued)

(Continued.)

Cond	Coded	Item	Complete open response
	E	17	The universe is so complex. To have everything come from the Big Bang seems just too impossible to not have external influence. Also, the Earth's placement in the Solar System is just perfect to be habitable is also nearly impossible to just have happened.
	U	18	I think all universes fall under the same religion and spiritual ideas/concepts.
	N	19	I think God is a very abstract concept, and we live in a universe where God can exist or not depending on your beliefs.
	E	20	Creation of something from nothing only possible when a higher power (i.e. God) acts.
	N	21	Because of my cultural and religious upbringing.
	U	22	God created the entire universe.
	I + E	23	I totally believe that God exists and just can't imagine that a God doesn't exist. It is simply my belief. The wonders of nature alone prove to me that there is a God. Our emotions, our loves, our creativity all are proof that God exists.
	U	24	Because God created the universe so of course, he exists.
	E	25	I did not state it was completely impossible. However, the possibility of everything falling into place just right is difficult to believe without an intelligent creator.
	E	26	Based on what God means to me now and in the past, I do not feel the universe could have been created without the hand of God beginning life as we know it.
	E	27	Because God created the world. If He didn't exist then He couldn't have created anything.
	N	28	He created everything and I turn to Him when I can't do anything else and He is always there for me.
	N	29	I do believe God created the universe.
	E	30	I think that it is impossible for consciousness to come from nothing, so therefore because we came into being we must have come from god or a higher being.
	E	31	It all couldn't have happened by accident.
	E	32	Because God is the Creator of all things everywhere.
	E	33	God created the universe. Without God, there would be no universe.
	E	34	No God = no universe.
	E	35	It doesn't feel like there would be anything without God.

(Continued)

(Continued.)

Cond	Coded	Item	Complete open response
	E	36	There's too much coincidence with life and how everything is organized for there not to be someone influencing the design.
	U	37	Because God created every universe.
	E	38	I believe a god must exist due to the creation of our race and existence. Without a god, there would be no reason or cause for our existence.
$I = I$			
	I	1	Probably because I don't think that there can be a universe in which there is a logical inconsistency. But of course, you really haven't specified what $I = I$ means; you've relied on our assumptions that 'I' is the natural number 1, and $=$ is non-equality over the natural numbers.
	I	2	I mean ... one is equal to one just like how a male is well ... a male. You can't really make it not equal when it is the same thing.
	I	3	If one doesn't equal one then the concept of one is meaningless.
	I	4	It's two of the exact same items the number 1 is equivalent to the number 1.
	I	5	There is only one right answer. 1 is always equal to 1, so it doesn't matter the universe.
	N	6	Because we can't even get along in this universe.
	I	7	$I = I$ is an identity axiom that is a fundamental basis of mathematical abstractions of the universe.
	I	8	Because 1 is defined as 1.
	U	9	It's just a simple fact of nature, at least at its core that I feel like it relates to that fact.
	I	10	If something IS itself, then that characteristic should carry with it no matter what the universe.
	I	11	One is itself which cannot *not* be itself, no matter the universe.
	I	12	It's a universal truth of math, constants like speed of light could change but not equivalency.
	I	13	It is a simple equation that means a thing is not itself. I do not believe this is possible.
	I	14	They are the same, so they are equal.

(Continued)

(Continued.)

Cond	Coded	Item	Complete open response
	I	15	Because they are the same, maybe another universe does math different but either way the number is the same so by logic in this universe, two of the same number will always be equal to each other.
	I	16	One is one.
	I	17	Because an object innately is equal to itself.
	N	18	If one doesn't equal one, then nothing should technically exist.
	I	19	It's essentially saying it's impossible for equal values to be equal.
	I	20	Because they are literally the same thing
	I	21	If one does not equal one, then one is not one. If one is not one, then the question is no longer asking about one.
	I	22	Because a rose is a rose by any name.
	I	23	I just can't think of how that would exist.
	E	24	It would defy the laws that bind everything we know.
	I	25	That $I = I$ is the law of identity, one of the most basic laws of logic. A universe where that isn't true is to say that it is absurd and illogical. Math is a reflection of the fact that the world follows rules. A universe cannot function without physical rules.
	U	26	I think it is nearly impossible because a value always equals the same value. I don't see how it could be any different. But I reserve the small doubt that I could be wrong and only looking at my current way of thinking and in a different universe there is some phenomenon that does make it different.
	N	27	Because anything is possible.
	I	28	Something has to equal itself. Otherwise nothing makes sense.
	N	29	The answer I gave did leave a slight chance of there being a universe as described. My answer would be, although slight, and difficult to comprehend there is a chance for this universe to exist.
	N	30	Because I believe God made everything and ' $I = I$ '.
	I	31	Because certain values will always equal each other no matter what they're called. Numbers are just one language of it.
	I	32	Because one always has to equal one, it's a mathematical absolute.

Legend: E = External, I = Internal, N = not relevant, U = unclear

Appendix 2: Complete coding and responses for Study 2b

Coded	Item	Complete open response
E	1	The complexity, order, and purposefulness observed in the universe suggest an intelligent designer.
E	2	I don't believe it all started with a big bang if nothing was here before. There must be something greater that created us all. Not just a few molecules crashing together.
N	3	God is love.
N	4	God could be an alien life form. Maybe they will not visit us for a while or are keeping an eye on us from afar.
E	5	Because the universe is far too well ordered for God not to exist. God exists because he does.
I?	6	God is eternal. He always existed. The beauty of creation shows that there is a Creator.
U	7	Even as a thought exercise, outside of believing for yourself, I would think anyone can agree that if a deity exists, then their reason for existence probably exists outside of man's knowledge.
E	8	The creation of the universe.
E	9	The Bible is the word of God. There is so much evidence in the Bible to know that God, truly does exist. But we need Faith to carry us thorough when we have doubt or fear.
I?	10	God has always existed and exists outside of time or the understanding of man.
U	11	God exists to bring His children, human beings, joy. Our happiness and education add to His glory and joy, just like a parent feels joy and love seeing their own children grow, learn and mature.
U	12	We have souls that exist in a spiritual world even after death.
E	13	Because we are here.
E	14	God exists because I believe the Bible that says God exists.
E	15	There needs to be a starter in the being of existence.
E	16	Something created everything that is all around us. Even if you believe in the big bang theory, something had to create those elements.
E	17	You need not look anywhere else to know that God exists. Look at the things around you – humans, trees, animals. We didn't come from nothing. We have a creator.
E	18	I have had some amazing things happen that I can't explain.

Legend: E = External, I = Internal, N = not relevant, U = unclear

Appendix 3: Complete coding and responses for Study 2c

Coded	Item	Complete open response
N	1	God doesn't have a reason for existing, He just is.
N	2	People tend to be raised on religion and it generally benefits them to believe in a 'higher' being.
N	3	It is scientifically impossible for something to come from nothing. We know the universe had a starting point; it didn't exist, and then it did. We have proven this through Einsteins theory of relativity and the Hubble telescope. For the universe to be created, there had to have been something outside of time, space, and matter. In addition, life on Earth would not be possible if the earth was not positioned in the exact specific way it is (the earth is tilted on a 23.4 degree axis). For example, imagine you are walking through the woods, lost, with no signs of civilization around. You spot, sitting on a nearby stump, a pocket watch. You pick it up and notice the hands of the clock are ticking. You open the back and see all the gears and cogs moving in perfect unison. Now, would you assume that this pocket watch just appeared on its own? That is manifested itself from nothing? Or that is had always been there? I would look at that pocket watch and assume it had a creator.
N	4	The scripture, and what else explains this world.
N	5	I think we have all made up ideas as to why God exists. Whether that is from the Bible, science, personal opinions, history.
N	6	The creation theory. God created the universe, the people, the plants, the animals.
N	7	I don't think there is anything that provides a good explanation of why God exists.
N	8	Hmm, the universe explains why God exists.
N	9	That is an extremely deep question that I cannot answer with conviction.
N	10	The connection of everything with each other and the ability for all things to have a purpose of divine necessity.
N	11	His past. His grave is the only one that is empty and it shows that he did rise from the dead.
N	12	God exists because with out him the universe would not exist. he creates all and thus created himself.
N	13	This is an excellent question, I've never thought of. I'll get back to you later on this.
N	14	I remember once reading philosophy books after high school and I remember one philosopher whose name escapes me at the moment who called God an 'unmoved mover' and said that God's existence could be proved by mere movement. Using that logic, I suppose an otherworldly force or a God had to create movement since it just did not suddenly exist.
N	15	How everything in the universe is connected and moves in unison. This can't be by accident and how can we get something from nothing?

(Continued)

(Continued.)

Coded	Item	Complete open response
N	16	I am not sure.
N	17	We explain why God exists through our belief in God.
I	18	Some theological and philosophical traditions posit that God exists necessarily, meaning that God's existence is not contingent on anything else but is intrinsic to God's nature. In this view, God's existence is seen as self-explanatory and not requiring an external cause.
N	19	Every living thing shows that God exists, in the absoluteness of of perfect balance in the diversity of nature, whether that is on Earth or in the cosmos. However, your question was 'why' God exists ... and that is not a simple answer. If we want to know why God exists in our lives, it is to show Himself to us and draw us close to Him in relationship. Mankind needs God to complete Him & the absence of God brings all the dark attributes of the world out in people. However, that is not why He exists. He exists simply because He is.
N	20	God explains that he is the ultimate creator. The creator of everything.
N	21	I believe that our spirits/souls are why God exists, to ensure people take time to help others and care for one another.
N	22	The universe explains why God exists.
N	23	I am still trying to figure that out.
I?	24	God has always existed. God is without any beginning and without any end, because God is beyond time and space.
N	25	God exists to give purpose and guidance to people.
N	26	This is an interesting question. I can't think of any reason off the top of my head. Believing God heavily relies on having faith. We cannot pin point concrete evidence that God exists.
N	27	I believe that God is not a single being, but rather the force of life that holds every single thing together. God is the connection between two strangers passing each other on the street, the meaning that we find in art, the emotion we feel for a tradition, the simple joy in the morning coffeebreak. God may explain the universe, but the universe explains God. The two cannot be separated.
N	28	I do not think there is an explanation for that. It's very much about faith.
N	29	God exists in order to create the universe. It gives a starting point to the beginning.
N	30	Without the existence of God nothing would be here not even humans.
I?	31	God is infinite.
N	32	The formation of all life not just on our planet but other planets. Science explains it as the goldilocks principle, but for something so specific to happen is vastly impossible. Add on to that, the evolution theory, while yes evolution can be explained, it's randomness to the point we are today is nearly impossible if not completely impossible to recreate.
N	33	He does not.

(Continued)

(Continued.)

Coded	Item	Complete open response
N	34	Just because he does. Also without the existence of God people would have no basis for mortality and no relevance at all.
N	35	To take care of the universe and its people.
N	36	He is the creator of everything and planets and universe is from a intelligent source.
N	37	I think it's a bit of the chicken and the egg! Perhaps God explains the universe and its creation, but maybe gods creation was an even earlier bit of other universe being created. Without the universe, there'd be no god, without no god, there'd be no universe!
N	38	God is omnipotent. Therefore, we can't ever know the awesome power he has, we can only imagine. His omnipotence means he is both the creator and the existence over everything including time.
N	39	Faith.
N	40	I have no idea. I question that a lot.
N	41	I have thought about that many times, and can't really come up with an answer other than the phrase 'I AM'. That phrase can mean he IS existence.
N	42	I don't think we're meant to know all the mysteries of the universe. I don't know why God exists, all I know is that He DOES exist. We're meant to have faith in this matter, not facts.
N	43	Life itself.
N	44	Miracles happen everyday which is why God exists.
N	45	You can't explain why the creator of the universe exists any more than you can explain why space and time are endless.
N	46	I think that God can also explain why He exists because he does so in the Bible.
N	47	Because he wants creatures to worship the creator.
N	48	Because the millions of things that would have to go right to create human life is nearly statistically impossible.
N	49	I have experienced the presence of God.

Legend: I = Internal; N = Not Internal