8 On Modal Arguments against Perfect Goodness

Michael Almeida

Abstract: The modal argument against perfect goodness requires nothing more than a single state of affairs that fails to provide conclusive evidence for the existence of God. If there is some state of affairs in some world that provides less than conclusive evidence for the existence of God, then the traditional God does not exist. But, surprisingly, there is an equally strong modal argument in favor of the existence of God. If there is a single state of affairs in some world that provides less than conclusive evidence for the existence of God. If there is a single state of affairs in some world that provides less than conclusive evidence against the existence of God, then the traditional God exists, indeed necessarily exists. The problem is that logics as strong as S5 produce unwelcome epistemological consequences. The proper logic for philosophical theism is among the weaker modal logics.

8.1 Introduction

Let $\Box Fx$ be a conjunctive property including essential moral perfection, omnipotence, and omniscience.¹ The modal argument against perfect goodness urges that there are at least some states of affairs S in some possible world w such that S entails that nothing exemplifies $\Box Fx$ in w. According to standard versions of the modal argument, if $\Box Fx$ is not exemplified in some world, then $\Box Fx$ is not exemplified in any possible world. There are no morally perfect beings and the traditional God is an impossible object.

Traditional modal arguments against perfect goodness require a logic at least as strong as S5. In Section 8.2 I discuss the traditional argument against perfect goodness: the modal argument from evil. According to the modal argument from evil, a sound modal argument against perfect goodness depends on there being possible worlds—or at least contingently creatable portions of possible worlds—that are on balance bad.

In Section 8.3 I show that a sound modal argument from evil does not require possible worlds that are on balance bad or even creatable portions of worlds that are on balance bad. A sound modal argument from evil does not depend on there being a single evil state of affairs in any world. The soundness of the modal argument from evil is consistent with every possible world being on balance good and, indeed, consistent with every possible world being infinitely good.

The modal argument from evil requires just a single state of affairs that does not provide conclusive evidence for $\Box F_G$. If there is some state of affairs in some world that provides less than conclusive evidence in favor of $\Box F_G$, then the traditional God does not exist. If there is a single state of affairs S such that $P(\Box F_G | S) < 1$, then the traditional God does not exist, indeed, necessarily does not exist. Since there are many possible states of affairs that do not provide conclusive evidence for $\Box F_G$, we have an extremely strong argument against the existence of the traditional God.

In Section 8.4 I show that there are equally strong modal arguments in favor of $\Box Fx$. If there is a single state of affairs, in some world, that provides less than conclusive evidence for $\neg \Box F_G$, then the traditional God exists, indeed necessarily exists. So, it is sufficient to show that the traditional God exists that there is some state of affairs S, in some world, such that $P(\neg \Box F_G | S) <$ 1. But there are many states of affairs that do not provide conclusive evidence for $\neg \Box F_G$. So we have an extremely strong modal argument in favor of the existence of the traditional God.

In Section 8.5 I show that it is a consequence of S5 that, necessarily, no state of affairs in any world provides any non-trivial evidence for or against $\Box F_G$. If $\Box F_G$ is true, then there are no states of affairs—no matter how bad those state of affairs happen to be—that we could not discover in the pluriverse. And if $\sim \Box F_G$ is true, there are no states of affairs—no matter how good those states of affairs happen to be—that we could not discover in the pluriverse. No state of affairs we might discover provides any non-trivial evidence for or against $\Box F_G$. Modal arguments from evil and modal arguments from goodness are therefore unsound. I offer some concluding remarks in Section 8.6.

¹ Let \Box Fx and similar properties name themselves, replacing $\lambda x \Box$ Fx.

8.2 The Modal Argument from Evil

According to standard formulations of the modal argument from evil the *mere possibility* of intrinsically evil states of affairs constitute at least some evidence against the existence of the traditional God. The initial goal of the modal argument from evil is to provide good reason to believe that at least some states of affairs in the pluriverse—somewhere in the totality of modal space—are bad enough that an essentially perfectly good being could not permit them. Ted Guleserian proposes the following principle.

It is reasonable to hold: (C1) if an amoral world is more evil than good then necessarily it is morally impermissible for any OOM [omniscient, omnipotent, morally perfect] being to allow it to be actual. (Guleserian, 1983, p. 225).

According to this moral principle any world in which God exemplifies essential omniscience, omnipotence, and perfect goodness—any world in which it is true that $\Box F_G$ —is a world that does not include more evil than good.² But the modal argument from evil does not require the existence of on balance bad worlds. Any possible world in which it is true that $\Box F_G$ is a world that does not include any intrinsically evil state of affairs that are gratuitous or unjustified.³ Worlds that a perfectly good being could not permit might otherwise be extremely good worlds. Guleserian nonetheless aims to show that there exist on balance bad worlds in the pluriverse.

According to Guleserian, there also exist worlds in which the totality of contingent states of affairs is on balance bad.

(C2) if ... the maximum creatable portion of an amoral world is more evil than good, then necessarily it is morally impermissible for any OOM being to allow that world to be actual. (Guleserian, 1983, p. 226)

The maximum creatable portion of a world is just the maximally consistent states of affairs that an omnipotent being actualizes in a world. So no matter how good a necessary state of affairs happens to be—say the infinite value of a necessarily existing perfectly good being—a world is not actualizable if its "creatable portion" is on balance bad. So, according to C2, it might be the case that a perfectly good being ought not actualize some worlds that are infinitely valuable.

But there might be many valuable objects in the creatable portion of worlds that are necessarily existing. It might be the case, for instance, that many sentient creatures are in the domain of every possible world. It might be that every sentient creature, or every possible object, exists in the domain of every possible world.⁴ These non-contingent beings contribute to the overall value of the creatable portion of possible worlds. And the overall intrinsic value of the sentient portion of worlds might be infinitely positive. So, we might want additional restrictions on the portion of worlds described in (C2).

(C3) if the maximum *contingent* creatable portion of a world is more evil than good, then necessarily it is morally impermissible for any OOM being to allow that world to be actual.

According to modal arguments from evil there are possible worlds, or contingent creatable portions of possible worlds, that satisfy the descriptions in the antecedents of C1–C3. So there are possible worlds that are such that it is impermissible for an essentially omnipotent, omniscient, perfectly good being to actualize them. Guleserian describes one of these worlds.

Think of a world, we will call it 'P,' in which the only sentient beings whose existence is contingent are nonrational animals of various sorts—or are sentient beings a good deal like the higher nonrational animals in our world—all of which suffer long spontaneous bouts of

² Guleserian restricts attention to amoral worlds—worlds in which there are no free moral agents—but that is irrelevant to the forthcoming arguments. An 'OOM being' is an omnipotent, omniscient, morally perfect being.

³ The standard view on evil is that God cannot permit any unjustified evils. But compare Almeida (2021).

⁴ See for instance Linsky and Zalta (1996) and their (1994). See Williamson (2015).

excruciating pain, and spend the few hours between bouts barely doing what is necessary to survive... Perhaps they exist for an infinite stretch of time. And during this eternity they never experience anything we would call pleasure ... Such a wretched world as P clearly seems to be logically possible, yet one that no divine being would permit to become actual. (Guleserian, 1983, p. 226)

No doubt the envisaged world is logically possible, since the world is perfectly consistent with classical logical laws. Indeed, the intrinsically evil states of affairs in the world P trivially entail those logical laws. And it is certainly not obvious that P is metaphysically impossible.

If there are possible worlds that satisfy the antecedent of C1–C3 then, according to the modal argument, there exists a possible world that is morally impermissible for an essentially omnipotent, omniscient, perfectly good being to actualize.

There is a possible world W such that, necessarily, for every x, if x: is OOM then it is not morally permissible for x to allow W to be actual. (Guleserian, 1983, p. 224)

If there are possible worlds that satisfy the antecedent of C1–C3 then, according to the modal argument, there are contingent portions of worlds that include extensive suffering that a perfectly good being necessarily prevents. So, there are at least some worlds that are not consistent with $\Box F_G$. Since the modal argument assumes S5, it follows that $\Box \sim \Box F_G$, there is no possible world that includes an essentially omnipotent, omniscient, perfectly good being. And so it is true in the actual world that $\sim \Box F_G$.

8.3 A Stronger Modal Argument from Evil

Most of the debate over the modal argument from evil concerns whether there exist worlds in which every sentient being suffers long spontaneous bouts of excruciating pain and, in general, whether there are worlds that are on balance bad. So it is crucial to the argument that a sound modal argument from evil does not require anything as strong as a possible world that is on balance bad. A sound modal argument from evil does not even require a contingent creatable portion of a world that is on balance bad.

It is no doubt more surprising that a sound modal argument does not require a single intrinsically evil state of affairs that is inconsistent with $\Box F_G$. There are cogent formulations of the modal argument forthcoming even if no possible worlds include any states of affairs S such that S entails $\sim \Box F_G$.

Let S be a state of affairs in some world w such that \Box (S $\rightarrow \neg \Box F_G$). The usual candidates for S include the vast magnitude of evil in some worlds or the unjust distribution of evil in some worlds or worlds that include gratuitous evils or unjustified evils and the like. But there remains significant disagreement over whether any of these states of affairs is possible and significant disagreement over whether any of these states of affairs is inconsistent with $\Box F_G$. There remains, in fact, disagreement over whether any possible state of affairs is inconsistent with $\Box F_G$.

But there is no controversy over whether there are some states of affairs in some possible worlds that constitute at least *some evidence* against $\Box F_{G}$. That is, there is no controversy that there are some states of affairs S in some possible worlds such that the probability of $\Box F_{G}$ on S is less than certain.

If there is some state of affairs S in some world such that \Box (S $\rightarrow \neg \Box F_G$), then we can conclude that P($\Box F_G | S$) = 0.⁵ This follows from (1.3). In this case, a single state of affairs in a single world provides conclusive evidence against the existence of an essentially omnipotent, omniscient, perfectly good being.

$$(1.3) \Box (S \longrightarrow \neg \Box F_G) \longrightarrow P(\neg \Box F_G | S) = 1$$

But suppose we fail to discover a possible state of affairs that is uncontroversially inconsistent with $\Box F_G$. Suppose the most we discover are states of affairs S in some possible worlds that make the

⁵ Conditional probabilities throughout are understood as epistemic probabilities. See Mellor (2005).

probability of $\Box F_G$ less than certain. There are many intrinsically evil state of affairs S that constitutes at least some evidence against $\Box F_G$.

(2.3) $P(\Box F_G | S) < 1$

Perhaps Guleserian's state of affairs of every sentient creature suffering infinitely is not inconsistent with the existence of an essentially omnipotent, omniscient, perfectly good being. But that state of affairs certainly does not make it certain that there exists an essentially omnipotent, omniscient, perfectly good being. And there are lots of other states of affairs that do not constitute conclusive evidence in favor of $\Box F_G$. The state of affairs of an earthquake's destroying Lisbon in 1755 or the state of affairs of a tsunami's devastating Japan in 2011 might not be inconsistent with $\Box F_G$. But, again, these states of affairs do not make it certain that $\Box F_G$. These states of affairs (2.3).

But if there is some state of affairs in some possible world that constitutes at least some evidence against $\Box F_G$, then that state of affairs does not entail $\Box F_G$. (2.3) is a consequence of the fact that, for every possible states of affairs S, if S entails $\Box F_G$ then $P(\Box F_G | S) = 1$.

 $(3.3) \ P(\Box F_G | \ S) < 1 \longrightarrow \neg \Box(S \longrightarrow \Box F_G)$

It follows from (2.2) and (2.3) that there exist some possible states of affairs that do not entail $\Box F_{G}$.

 $(4.3) \sim \Box (S \longrightarrow \Box F_G)$

But in S5 it is a consequence of (4.3) that S entails $\sim \Box F_G$. (5.3) is also a theorem of S5.⁶ⁱ

 $(5.3) \sim \Box(S \longrightarrow \Box F_G) \longrightarrow \Box(S \longrightarrow \sim \Box F_G)$

From (3.3)—(5.3) we know that if the state of affairs of a tsunami's devastating Japan constitutes some evidence against the existence of God—or, for that matter, if the state of affairs does not constitute *conclusive evidence for* the existence of God—then a tsunami's devastating Japan entails the non-existence of God. But if a tsunami's devastating Japan entails the non-existence of God. But if a tsunami's devastating Japan entails the non-existence of God, then that state of affairs constitutes conclusive evidence against the existence of God. (6.3) is a consequence of the fact that, for all possible states of affairs S, if S entails ~ $\Box F_G$ then P(~ $\Box F_G | S) = 1$.

$$(6.3) \Box(S \longrightarrow \neg \Box F_G) \longrightarrow P(\neg \Box F_G | S) = 1$$

So, the modal argument from evil does not in fact require a possible world that is on balance bad. The modal argument does not even require a contingent, creatable portion of a world that is on balance bad. And the modal argument from evil does not require a single intrinsically evil state of affairs that is inconsistent with $\Box F_G$. A cogent formulation of the modal argument requires only a single state of affairs S that does not constitute conclusive evidence for $\Box F_G$. If there is a single state of affairs S in some world that does not constitute conclusive evidence for $\Box F_G$, then S constitutes conclusive evidence against $\Box F_G$. (7.3) follows from (1.3) – (6.3).

 $(7.3) \ P(\Box F_G | \ S) < 1 \longrightarrow P(\sim \Box F_G | \ S) = 1$

Since there are lots of states of affairs that constitute inconclusive evidence for the existence of an essentially omnipotent, omniscient, and perfectly good being, (7.3) entails that those states of affairs constitute conclusive evidence against the existence of an essentially omnipotent, omniscient, perfectly good being. The state of affairs of an earthquake's destroying Lisbon and the state of affairs of a tsunami's devastating Japan might not be inconsistent with $\Box F_G$, but they

⁶ I've left off the quantifiers, but the perfectly general proposition is a theorem in S5. $\forall S(\neg \Box (S \rightarrow \Box F_G) \rightarrow \Box (S \rightarrow \neg \Box F_G))$. The quantification is over possible states of affairs; I assume that the same states of affairs exist in every world.

certainly do not constitute conclusive evidence in favor of $\Box F_G$. So, it follows from (7.3) that we have conclusive evidence that God does not exist.

(8.3) $P(\sim \Box F_G | S) = 1$

8.4 A Modal Argument from Goodness

The initial goal of the modal argument from goodness is to provide good reason to believe that at least some possible worlds are consistent with the existence of an essentially perfectly good being. Guleserian's conditions for impermissible actualization in C1–C3 provide the initial criteria for consistency. In general, possible worlds consistent with the exemplification of \Box Fx meet the conditions in C4.

It is reasonable to hold: C4 for any amoral world w consistent with the exemplification of \Box Fx, the maximal creatable portion of w and the maximum contingent creatable portion of w and world w itself, do not include more evil than good.

C4 is not intended to specify all of the conditions on possible worlds consistent with $\Box F_G$ Considerably higher standards of permissible actualization might include natural perfection and an axiological minimum. An amoral world is naturally perfect just if the world includes no natural evils. Amoral worlds trivially meet the standard of moral perfection, since amoral worlds include no moral agents. A possible world meets the axiological minimum just if the world is overall sufficiently valuable. We might require that possible worlds w consistent with $\Box F_G$ are such that the maximal creatable portion of w and the maximum contingent creatable portion of w also meet the axiological minimum. It is difficult to believe that there are no possible worlds in the pluriverse that meet the standard in C4 and the considerably higher standards of natural perfection and an axiological minimum.

But it is extremely important for the modal argument from goodness that a sound modal argument does not in fact require a possible world that meets the standards above. A sound modal argument does not even require a contingent creatable portion of a world that is naturally perfect. All that is required for a sound modal argument from goodness is a single state of affairs that does not make $\sim \Box F_G$ certain. So, all that is required for a sound modal argument from goodness is a single state of affairs that does not constitute conclusive evidence against the existence of the traditional God.

Suppose we discover some state of affairs S in some possible world that does not make the probability of $\sim \Box F_G$ certain. So (1.4) is true.

(1.4)
$$P(\sim \Box F_G | S) < 1$$

Perhaps the state of affairs of every sentient creature enjoying its life over an infinite period of time or the state of affairs of a possible world being naturally perfect do not ensure the existence of an essentially omnipotent, omniscient, perfectly good being. But these state of affairs certainly do not make it certain that there does not exist an essentially omnipotent, omniscient, perfectly good being. And there are lots of other states of affairs that do not constitute conclusive evidence for $\sim \Box F_G$. These states of affairs constitute at least some evidence for $\Box F_G$. So there are several states of affairs that satisfy (1.4).

But if there are some states of affairs in some possible worlds that constitute at least some evidence for $\Box F_G$, then those states of affairs do not entail $\sim \Box F_G$. (2.4) is a consequence of the fact that, for all possible states of affairs S, if S entails $\sim \Box F_G$ then $P(\sim \Box F_G | S) = 1$.

 $(2.4) \ P(\thicksim \Box F_G | \ S) < 1 \longrightarrow \lnot \Box \ (S \longrightarrow \lnot \Box F_G)$

It follows from (1.4) and (2.4) that there exist some possible states of affairs that do not entail $\sim \Box F_G$.

 $(3.4) \sim \Box \ (S \longrightarrow \sim \Box F_G)$

But it follows from (3.4) that S entails $\Box F_G$. (4.4) is also a theorem of S5.⁷

$$(4.4) \sim \Box (S \longrightarrow \sim \Box F_G) \longrightarrow \Box (S \longrightarrow \Box F_G)$$

From (1.4)–(4.4) we know that if a state of affairs S does not constitute conclusive evidence for the non-existence of God, then S entails the existence of God. But if S entails the existence of God, then S constitutes conclusive evidence for the existence of God. (5.4) is a consequence of the fact that, for all possible states of affairs S, if S entails $\Box F_G$ then P($\Box F_G | S$) = 1.

$$(5.4) \Box (S \longrightarrow \Box F_G) \longrightarrow P(\Box F_G | S) = 1$$

So, the modal argument from goodness does not in fact require a possible world that meets the standards described above. The modal argument from goodness does not require a contingent creatable portion of a world that is naturally perfect or axiologically perfect. The modal argument from goodness does not even require a single state of affairs that is inconsistent with $\sim \Box F_G$. A cogent formulation of the modal argument requires only a single state of affairs S that does not constitute conclusive evidence against the existence of God. If there is a single state of affairs S in some world that does not constitute conclusive evidence for $\sim \Box F_G$, then S constitutes conclusive evidence for $\Box F_G$. (6.4) follows from (2.4), (4.4), and (5.4).

 $(6.4) P(\sim \Box F_G | S) < 1 \longrightarrow P(\Box F_G | S) = 1$

Since there are lots of states of affairs that constitute inconclusive evidence for $\sim \Box F_G$, (6.4) entails that those states of affairs constitute conclusive evidence for $\Box F_G$. So, it follows from (6.4) that we have conclusive evidence that God does exist.

(7.4)
$$P(\Box F_G | S) = 1$$

In Section 8.3 it was shown that, given the logic of S5, any state of affairs S that does not constitute conclusive evidence for $\Box F_G$ does constitute conclusive evidence for $\sim \Box F_G$. But there are lots of states of affairs that do not constitute conclusive evidence for $\Box F_G$ including Lisbon's 1755 earthquake and Japan's 2011 tsunami. From these states of affairs we can derive (8.3) $P(\sim \Box F_G | S) = 1$. So, we have conclusive evidence that the traditional God does not exist.

But in Section 8.4 it was shown that, given the logic of S5, any state of affairs S that does not constitute conclusive evidence for $\sim \Box F_G$ does constitute conclusive evidence for $\Box F_G$. But there are lots of states of affairs that do not constitute conclusive evidence for $\sim \Box F_G$ including the state of affairs of there being a naturally perfect world and the state of affairs of every sentient creature enjoying its life over an infinite period of time. From these states of affairs we can derive (7.4) $P(\Box F_G | S) = 1$. So, we have conclusive evidence that the traditional God does exist.

But (8.3) and (7.4) are inconsistent. We cannot have conclusive evidence that the traditional God exists and also have conclusive evidence that the traditional God does not exist. But there is a more challenging conclusion. From (3.4)—(4.4) we know that there are some states of affairs S such that \Box (S $\rightarrow \Box$ F_G). And from (4.3)—(5.3) we know that there are some states of affairs S such that \Box (S $\rightarrow \sim \Box$ F_G). So we have the explicit contradiction \Box F_G & $\sim \Box$ F_G. It follows that either the modal argument from evil is unsound or the modal argument from goodness is unsound, and maybe both.

8.5 Some Consequences of S5

The central problem with the modal argument from evil is not that there are no possible worlds that include unjustly distributed evils or unjustified evils. The problem is not even that there are no possible worlds that include, as Guleserian argues, sentient beings all of which suffer long spontaneous bouts of excruciating pain. The problem is rather that, granting the logic of S5, none of these states of affairs provides any *non-trivial evidence* against the traditional God. It is a

⁷ The quantifiers have again been left off.

theorem in S5 that every state of affairs in every possible world either trivially entails $\Box F_G$ or trivially entails $\sim \Box F_G$. (1.5) is a theorem.⁸

$$(1.5) \forall S \Box (S \longrightarrow \Box F_G) \lor \forall S \Box (S \longrightarrow \neg \Box F_G)$$

So every state of affairs in every possible world trivially supports $\Box F_G$ or every state of affairs in every world trivially supports $\sim \Box F_G$. Indeed, every state of affairs in every world makes $\Box F_G$ certain or every state of affairs in every world makes $\sim \Box F_G$ certain. (2.5) is also a theorem.

$$(2.5) \forall \mathbf{S}(\mathbf{P}(\Box \mathbf{F}_{\mathbf{G}} | \mathbf{S}) = 1) \mathbf{v} \forall \mathbf{S}(\mathbf{P}(\thicksim \mathbf{F}_{\mathbf{G}} | \mathbf{S}) = 1)$$

So, the state of affairs S—sentient beings suffering excruciating pain—does not entail $P(\sim \Box F_G | S) > 0$ without the auxiliary premise that $\sim \Box F_G$. To determine whether S is evidence for $\sim \Box F_G$ we have to first determine whether it is true that $\sim \Box F_G$. If it is true that $\Box F_G$ then the state of affairs S of sentient beings suffering excruciating pain is trivial evidence for $\Box F_G$. Indeed, in this case S makes $\Box F_G$ certain.

The modal argument from goodness has precisely the same problem. In S5, the state of affairs of a world's being naturally perfect provides no non-trivial evidence for $\Box F_G$. Given (1.5) every state of affairs in every possible world either trivially entails $\Box F_G$ or trivially entails $\sim \Box F_G$. So, the state of affairs S of there being worlds that are naturally perfect does not entail $P(\Box F_G | S) > 0$ without the auxiliary premise that $\Box F_G$. To determine whether S is evidence for $\Box F_G$ we have to first determine whether it is true that $\Box F_G$. If it is true that $\sim \Box F_G$, the state of affairs S of there being naturally perfect for $\sim \Box F_G$. Indeed, in this case S makes $\sim \Box F_G$ certain.

The problem in the modal argument from evil and the modal argument from goodness is that (1.4) and (2.3) cannot both be true. Given the logic of S5, (3.5) is impossible. Modal space cannot include states of affairs that constitute some evidence against $\Box F_G$ and states of affairs that constitute some evidence against $\sim \Box F_G$.

$$(3.5) \exists SP(\sim \Box F_G | S) < 1 \& \exists SP(\Box F_G | S) < 1$$

It is false, according to (3.5) that there is some possible state of affairs that makes God's nonexistence less than certain and also some state of affairs that makes God's existence less than certain. The epistemology is in fact stranger, since (4.5) and (5.5) are both impossible.

$$(4.5) \exists SP(\sim \Box F_G | S) = n(0 < n < 1)$$

 $(5.5) \exists SP(\Box F_G | S) = n(0 < n < 1)$

There are no states of affairs in any world that make $\Box F_G$ anything other than certainly true or certainly false. And of course the same holds for $\sim \Box F_G$. (3.5)—(5.5) follow from the fact that there are no states of affairs in any world that constitute non-trivial evidence for or against $\Box F_G$.

8.6 Conclusion

The modal argument from evil is unsound. It does not follow from the fact that there are possible worlds that include sentient beings suffering excruciating pain that the traditional God does not exist. It does not even follow from that state of affairs S that it is improbable—or even less probable—that the traditional God exists. The inference from S to $P(\sim \Box F_G | S) > 0$ is valid only if it is true that $\sim \Box F_G$. So discovering that there are intrinsically evil states of affairs does not alone constitute any evidence for $\sim \Box F_G$. For perfectly analogous reasons the modal argument from good is also unsound. The consequences are the same for any argument from evil—modal, evidential, or logical—whose background logic is at least as strong as S5.

⁸ We add \forall S and \exists S to the language of the logic S5 quantifying over all possible states of affairs. We take states of affairs to be necessarily existing, abstract objects.

References

- Almeida, Michael (2021), "On Necessary Gratuitous Evil," in *European Journal for Philosophy of Religion* 12 (3): 117-135
- Almeida, Michael (2022), "Evil Is Not Evidence," in *Religious Studies*. vol. (1) no. (1) (2022) 1 9 (open access)
- Almeida, Michael (2022), 'Necessity, Theism, and Evidence', Logique et Analyse Vol. 259, (2022) 287-307
- Guleserian, Theodore (1983), "God and Possible Worlds: The Modal Problem of Evil," in *Noûs* 17(2), 21–238.
- Linsky, B. and Zalta, E. (1994), "In Defense of the Simplest Quantified Modal Logic," in *Philosophical Perspectives* 8, 431–458.
- Linsky, B. and Zalta, E. (1996), "In Defense of the Non-Concrete," in *Philosophical Studies* (Special Issue: Possibilism and Actualism) 84(2–3), 283–294.
- Mellor, D. H. (2005), Probability: A Philosophical Introduction, London: Routledge.
- Williamson, Timothy (2015), Modal Logic as Metaphysics, Oxford: Oxford University Press.