The Ontological Argument(s)

Arguments for a necessary being
Logical necessity

• In general, logical necessity is a relation between two sentences – also called ‘logical consequence’.

• “Q is necessary for P” means the same as “Q is a logical consequence of P”, or “P logically entails Q”.
  – E.g. “Fred is not married” is necessary for “Fred is a bachelor”.

• Logically necessary sentences are those that can be inferred from no premises at all. E.g.
  – “If Fred is 6 feet tall, then he is more than 5 foot 6.”
  – “Mary isn’t an illiterate person who loves reading”
  – “2 + 3 = 5”
Elementary Proof in F+ that 1 + 1 = 2

1. \( \exists x \ (F(x) \land \forall y \ (F(y) \rightarrow y = x)) \)
2. \( \exists x \ (G(x) \land \forall y \ (G(y) \rightarrow y = x)) \)
3. \( \neg \exists x \ (F(x) \land G(x)) \)
4. \( \neg F(a) \land \forall y \ (F(y) \rightarrow y = a) \)
5. \( F(a) \)
6. \( \forall y \ (F(y) \rightarrow y = a) \)
7. \( G(b) \land \forall y \ (G(y) \rightarrow y = b) \)
8. \( G(b) \)
9. \( \forall y \ (G(y) \rightarrow y = b) \)
10. \( \neg \exists x \ (F(x) \lor G(x)) \)
11. \( \neg F(c) \lor G(c) \)
12. \( F(c) \rightarrow c = a \)
13. \( c = a \)
14. \( c = a \lor c = b \)
15. \( \exists x \ (F(x) \lor G(x)) \)
16. \( G(c) \rightarrow c = b \)
17. \( c = b \)
18. \( c = a \lor c = b \)
19. \( c = a \lor c = b \)
20. \( \forall z \ ((F(z) \lor G(z)) \rightarrow (z = a \lor z = b)) \)
21. \( a = b \)
22. \( F(b) \)
23. \( F(b) \land G(b) \)
24. \( \exists x \ (F(x) \land G(x)) \)
25. \( \bot \)
26. \( a \neq b \)
27. \( F(b) \lor G(b) \)
28. \( F(a) \lor G(a) \)
29. \( (F(a) \lor G(a)) \land (F(b) \lor G(b)) \land a \neq b \land \forall z \ ((F(z) \lor G(z)) \rightarrow (z = a \lor z = b)) \)
30. \( \exists x \exists y ((F(x) \lor G(x)) \land (F(y) \lor G(y)) \land x \neq y \land \forall z ((F(z) \lor G(z)) \rightarrow (z = x \lor z = y))) \)
31. \( \exists x \exists y ((F(x) \lor G(x)) \land (F(y) \lor G(y)) \land x \neq y \land \forall z ((F(z) \lor G(z)) \rightarrow (z = x \lor z = y))) \)
32. \( \exists x \exists y ((F(x) \lor G(x)) \land (F(y) \lor G(y)) \land x \neq y \land \forall z ((F(z) \lor G(z)) \rightarrow (z = x \lor z = y))) \)
“Causal necessity”

• If the concept of logical necessity only applied to human thought, then it wouldn’t have the huge importance to philosophy that it has.

• Early modern philosophers (Kepler, Galileo, Huygens, Leibniz, Newton, Euler, etc.) found that the concept of necessity applies to physics.
  – A system can be described using mathematical laws, and then its actual behaviour can be predicted in advance by logical inference from those laws.
“What led me to my science and what fascinated me from a young age was the, by no means self-evident, fact that our laws of thought agree with the regularities found in the succession of impressions we receive from the natural world, that it is thus possible for the human being to gain enlightenment regarding these regularities by means of pure thought …”

Max Planck, *A Scientific Autobiography* (1948)
Necessity in physics

“As [the principles of mechanics] have heretofore been insufficiently established, I demonstrate them in such a manner that they will be understood to be not only certain but even necessarily true”

Leonhard Euler, 1736.
E.g. the principle of the lever

\[ M_1 \times a = M_2 \times b \]
• Simon Stevin proved the principle, from the assumption that a symmetric cause must have an effect that is symmetric in the same respect.
Rationalism: *Objective reality has a rational structure, so that reality is comprehensible.*

1. The relation of cause and effect mirrors the relation of logical consequence. (similar to PSR)
   - Effects can be logically inferred from their causes, i.e. from suitably complete descriptions of the total cause.
   - Hence, if a cause is symmetric, in a certain respect, then its effects must also be symmetric, in the same respect.
   - (In logic, *the same premises must lead to the same conclusion.*)
Newton’s theory of inertia, and the $1/r^2$ gravitational force, predicted *elliptical* orbits for the planets.
In 1669 Huygens showed that the laws of elastic collision logically follow from symmetry principles.
Not all physics is necessary

• By the way, it appears that the laws of physics can’t all be derived *a priori*, without observation!
• The laws contain ‘fundamental constants’, such as the speed of light, that can only be known empirically (it seems).
• The initial state of a system also seems arbitrary.
• These are “contingent” facts.
“Contingent” facts

A *contingent* fact is true, but not necessarily true.

*Trudeau is either tall or not tall*
  – logically necessary

*Trudeau is both tall and short*
  – necessarily false (i.e. logically impossible)

*Trudeau is tall*
  – logically contingent.
Contingent beings

• Is the fact that Justin Trudeau exists a contingent fact or a necessary one?

• It’s contingent, as his existence required many events that could easily not have occurred.

• A being whose existence is contingent is called a “contingent being”.
A “necessary being”?  

• A necessary being is one that *has* to exist, i.e. could not have not existed. It exists “in every possible world”.

• No *material* object seems to be a necessary being.

• In fact, it seems doubtful that *anything’s* existence could be logically necessary.
  – How could you start with *no information*, and logically infer that a certain being exists?
Is God’s existence logically necessary?

• If God’s existence is *logically necessary*, then a sufficiently smart and rational person can just see that God exists, in the same way that a smart person can see that the prime numbers go on forever.
Kant’s objection to necessary existence

• Many philosophers are very sceptical of the idea that any being could exist by logical necessity. E.g. Kant (*Critique of Pure Reason*):

• “For I find myself unable to form the slightest conception of a thing which when annihilated in thought with all its predicates, leaves behind a contradiction; and contradiction is the only criterion of impossibility in the sphere of pure *a priori* conceptions.”
Principle of Sufficient Reason (PSR)

- Leibniz said that there is a ‘sufficient reason’ for every object that exists, and every event that occurs.

“for any true proposition P, it is possible for someone who understands things well enough to give a sufficient reason why it the case that P rather than not-P.”

- A ‘sufficient reason’ sounds like an explanation.
  - Explanations usually appeal to causes of the thing being explained.
What is an explanation?

• Explanation is certainly linked to causation. In general, we explain an object or event by describing its causes.

• E.g. “Why was the train delayed?” “Oh, signal failure outside Clapham Junction.”

• But explaining something requires *more* than saying what the cause is. We also need ‘intellectual satisfaction’.
Fred: See, I’m mixing the baking soda and the vinegar, and it starts foaming rapidly.
Sally: Yes, but why is foam produced?
Fred: I just told you. The foam is caused by mixing baking soda with vinegar.
Sally: Right. But why does mixing soda with vinegar cause foam?
Fred: Oh. \( \text{NaHCO}_3 + \text{CH}_3\text{CO}_2\text{H} \rightarrow \text{CH}_3\text{CO}_2\text{Na} + \text{H}_2\text{O} + \text{CO}_2(g) \).

(An intellectual understanding of the cause, as (e.g.) the chemical formulas, allows a person to “see why” that cause must lead to that effect. Is that what Leibniz meant?)

“it is possible for someone who understands things well enough to give a sufficient reason why it the case that P rather than not-P.”
Intellectual satisfaction

• Explanation should be *intellectually satisfying*. This means that we can “see”, in our minds, *why* the cause *must* give rise to the effect.

• This requires that the propositions describing the causal chain, connecting the cause to the effect, are *logically* related as well.

• I.e. Cause $\Rightarrow E_1 \Rightarrow E_2 \Rightarrow \ldots \Rightarrow$ Effect

• (‘$\Rightarrow$’ expresses logical consequence)
A self-existent being is *necessary*?

- To explain something involves *inferring* its existence and properties from a description of its causes.
  - (I.e. showing that it is *logically necessary*, given its causes.)
- A self-existent being cannot be explained by reference to its causes, since it has no causes.
- Thus a self-existent being will be completely *inexplicable*, unless its existence can be logically inferred from no premises.
  - A self-existent being would violate PSR, unless it is also a logically necessary being.
Why does the necessary being exist?

• “… a necessary being is a being whose non-existence is impossible. Thus, for any necessary being, there is by definition a sufficient reason for its existence: there could hardly be a better explanation of the existence of a thing than that its non-existence would be impossible.” (Peter van Inwagen, *Metaphysics*, p. 161.)

• (Alternatively, one might say that a necessary being needs no explanation, and modify PSR to say that every contingent being has an explanation.)
Leibniz’s cosmological argument

1. Every contingent fact has an explanation (PSR)
2. There is a total contingent fact $C$ that includes all other contingent facts.

\[\therefore\] There is an explanation of this fact $C$.
\[\therefore\] This explanation must involve a necessary being.

(Note that the conclusion here is that a necessary being exists, not a self-existent being.)
Problems with PSR

1. If contingent facts are fully explicable (i.e. deductive consequences) given a necessary being, then that would make them necessary facts!

2. The full PSR entails determinism, whereas quantum physics only includes probabilities for some events.

3. Why believe PSR to begin with?
   – Mackie: “… it may be intellectually satisfying to believe that there is, objectively, an explanation for everything together … But we have no right to assume that the universe will comply with our intellectual preferences”
Problem 1: Valid in modal logic

Necessarily, P
Necessarily, if P then Q
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⇒ Necessarily, Q

□P
□(P → Q)
---
□Q

□God
□(God → Me)
---
□Me
Problem #2: E.g. nuclear decay

- Most contemporary physicists think that the decay of an atomic nucleus is a truly random event, unpredictable in principle.

- The *cause* of a $\beta$-particle produced in such an event is clear enough. But can we (fully) *explain* the existence of the $\beta$-particle, at this time?
Fred: Why did the nucleus decay at time $t$?

Sally: It was Radium-228, which is unstable. It has a half-life of 5.75 years.

Fred: But it didn’t have to decay at time $t$. So why did it decay at $t$, rather than earlier, or later? Why pick that moment?

Sally: There’s no answer to that. These things are ultimately unpredictable.
PSR with probabilities

• Such physical probabilities can be reconciled with a weakened (rather natural) version of PSR.

• Determinism arises from PSR due to the logical fact that “the same premises must lead to the same conclusion”. But this only applies to deductive arguments!

• For an inductive argument, the relevant logical principle is: “the same premises must lead to the same probability of the conclusion.

• And this is exactly what we have in quantum physics. The probability of each event is fixed by the causes.
Divine free will

• Quantum systems are apparently not fully comprehensible, so that their behaviour is not fully predictable.

• Even after the quantum experiment is set up, the actual outcome is still contingent (not necessary).

• In a similar way, the doctrine of divine free will (e.g. in Augustine) allows a necessary being to explain contingent events (e.g. the physical constants). So the weakened PSR solves problem #1 as well.
Problem #3 with PSR

Mackie: “… it may be intellectually satisfying to believe that there is, objectively, an explanation for everything together … But we have no right to assume that the universe will comply with our intellectual preferences”

Responses?
Ontological arguments

• The conclusion of an ontological argument is that there is a necessary being. There is one being whose existence is logically necessary.

• But what kind of being would exist necessarily?
  i. (Perhaps a self-existent being?)
  ii. (Perhaps one that explains the existence of contingent beings?)
  iii. Perhaps a maximal, or “greatest possible”, being?
  iv. Perhaps a being that defines the very rules of logic?
(iii) A maximal being

• St. Anselm said that we all have an idea of God, at least, according to which God is the “maximal”, or greatest possible, being.
  – It is also said that God has all the “perfections”, or positive properties, like power, knowledge, goodness, etc. to the maximum possible degree.
• Anselm also noted that a being that exists is greater than one that is merely an idea. Thus existence is a perfection.
• But in that case, doesn’t the claim that God doesn’t exist imply a contradiction? Like a 4-sided triangle?
Anselm, in the *Proslogion*

• [Even a] fool, when he hears of ... a being than which nothing greater can be conceived ... understands what he hears, and what he understands is in his understanding.... And assuredly that, than which nothing greater can be conceived, cannot exist in the understanding alone. For suppose it exists in the understanding alone: then it can be conceived to exist in reality; which is greater.... Therefore, if that, than which nothing greater can be conceived, exists in the understanding alone, the very being, than which nothing greater can be conceived, is one, than which a greater can be conceived. But obviously this is impossible. Hence, there is no doubt that there exists a being, than which nothing greater can be conceived, and it exists both in the understanding and in reality.
1. God is (by definition) a being than which no greater can be conceived.

2. It is greater to exist in reality than merely as an idea.

3. If God does not exist, one can conceive of an even greater being than God, i.e. one that does exist.

Therefore, God exists in reality.
Gaunilo’s island

(See the textbook, p. 135)

1. The Lost Island is that island than which no greater can be conceived.
2. It is greater to exist in reality than merely as an idea.
3. If the Lost Island does not exist, one can conceive of an even greater island, that is one that does exist.

Therefore, the Lost Island exists in reality.
Kant’s criticism

• There is something odd about Anselm’s ontological argument, in the way it goes from concepts to reality. (E.g. Aquinas found it very fishy.)

• Kant said that the mistake is to see existence as a concept, comparable to concepts like tall, wise, etc.
  – Think about a possible house, an idea of a house. Adding an extra balcony, fireplace, etc. to the concept is very different from adding existence.
  – So “non-existent maximal being” isn’t really a contradictory concept. It’s not like “4-sided triangle”.
“Thus when I think a thing, through whichever and however many predicates I like (even in its thoroughgoing determination), not the least bit gets added to the thing when I posit in addition that this thing exists. For otherwise what would exist would not be the same as what I had thought in my concept, but more than that, and I could not say that the very object of my concept exists”
• OK Kant, existence isn’t a concept. But surely *necessary existence* is? After all, many things that exist (including ourselves) don’t possess *necessary* existence.

• And aren’t we the worse for it? Putting it another way, suppose you meet a being who claims to be God. “Yes, despite what those atheists say, I do exist”, he says. “Fortunately.”

  -- “Fortunately?”

  “Well, yes,” he continues, “Had things gone even slightly differently, I would never have existed. I was jolly lucky, really, the way things turned out.”
The Modal Ontological Argument

• This contingent being doesn’t match up to our conception of God:
  – If any being is God, then it exists necessarily
  – If any being is God, then it doesn’t just happen to have divine attributes (e.g. omnipotence), but has them necessarily.

• Take this conception of God, and add the premise that it’s *logically possible* for such a being to exist. Then it follows that God exists.
G is, by definition, a necessarily existent being.

1. It is logically possible that G exists

\[ \therefore G \text{ exists} \]

Proof:

From the premise, G exists in at least one possible world \( w \). Then by the very concept of G, \( \Diamond (G \text{ exists}) \) holds in \( w \). It follows that G exists in the actual world. Hence G exists. \( \blacksquare \)
Objection

• Is there any reason to accept such a premise?

• (Leibniz, Gödel, etc. tried to show that the perfections are all logically consistent, so that “being with all the perfections” is a consistent concept, and hence logically possible.)
(iv) A being needed for logic itself?

• The necessary existence of God seems problematic, but many other things seem to exist necessarily:
  – Numbers, sets, vectors, etc.
  – Laws of logic
  – Possible states of affairs, possible worlds

• Do these get around Kant’s objection to the idea of a necessary being?
• “For I find myself unable to form the slightest conception of a thing which when annihilated in thought with all its predicates, leaves behind a contradiction; and contradiction is the only criterion of impossibility in the sphere of pure *a priori* conceptions.”
(iv) A being needed for logic itself?

• At one point in his life, Descartes was trying to get rid of all beliefs he had that were possibly false. He even questioned his own existence!
  – “Perhaps I don’t really exist; instead, someone has tricked me into thinking that I exist.”

• Is there any reason to dismiss this doubt?
  – Descartes argued that this particular doubt has a kind of logical inconsistency. Non-existent beings cannot be deceived, since there is no one there to deceive. So no being can be tricked into thinking that it exists. If it thinks at all (about anything) then it exists. “Je pense, donc je suis”
(iv) A being needed for logic itself?

• In a similar way, as soon as one starts to think, and reason logically, one assumes various things:
  – My thoughts are meaningful. They are capable of representing states of affairs, or facts, in the world.
  – There are logical facts about which inferences are valid, i.e. whether proposition B follows from A.

• As soon as one starts to reason logically, one must accept the existence of a logical realm that transcends one’s own mind.
Is *Logic* itself a necessary being?

• Logic includes a body of normative rules, designating some inferences as ‘valid’ and others ‘invalid’.
• Are these rules mere cultural products, like norms of etiquette?
• Or do the laws of logic hold across all human cultures, as general truths of human biology?
• Or are the laws of logic transcendent, holding for all (possible and actual) rational beings? (‘Part of the fabric of reality itself’?)
Gottlob Frege on the laws of logic

“If being true is thus independent of being recognized as true by anyone, then the laws of truth [i.e. laws of logic] are not psychological laws, but boundary stones set in an eternal foundation, which our thought can overflow but not dislodge. And because of this they are authoritative for our thought if it wants to attain truth.”

(Frege, *Grundgesetze der Arithmetik*, 1893, p. 202)
Where does logic come from?

• Logic is usually taken as a starting point in philosophy, and its origin and nature are not much discussed.

• It does appear however that logical rules are norms governing thought.

• According to naturalism, rational thought is of no deep significance (it’s just a biological process that exists in only one species on earth) so the existence of transcendent norms governing such thought is rather bizarre from that perspective.
Augustinian theism

- From a theistic perspective, however, logic can more easily have the kind of transcendent objectivity that logicians like Frege believe in.

- Many theists follow Augustine in regarding logic as “the architecture of God’s mind”.
  - Universals are divine concepts
  - States of affairs are divine thoughts, etc.
“Augustinian theism [also] provides an attractive explanation [of] the ontological status of the objects of logic and mathematics. To many of us both of the following views seem extremely plausible.

(1) Possibilities and necessary truths are discovered, not made, by our thought. They would still be there if none of us humans ever thought of them.

(2) Possibilities and necessary truths cannot be there except insofar as they, or the ideas involved in them, are thought by some mind.

The first of these views seems to require Platonism; the second is a repudiation of it. Yet they can both be held together if we suppose that there is a non-human mind that eternally and necessarily exists and thinks all the possibilities and necessary truths. Such is the mind of God, according to Augustinian theism.”

• Responses?