St. Anselm of Canterbury, 1033-1109

Arguments about necessary being

Must/can a necessary being exist?

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. $\exists x \, (F(x) \land \forall y \, (F(y) \to y = x))$
2. $\exists x \, (G(x) \land \forall y \, (G(y) \to y = x))$
3. $\neg \exists x \, (F(x) \land G(x))$

   4. $\boxed{a}$ ▽ $F(a) \land \forall y \, (F(y) \to y = a)$
   5. $F(a)$ ✔ ▽ **∧ Elim:** 4
   6. $\forall y \, (F(y) \to y = a)$ ✔ ▽ **∧ Elim:** 4

     7. $\boxed{b}$ ▽ $G(b) \land \forall y \, (G(y) \to y=b)$
     8. $G(b)$ ✔ ▽ **∧ Elim:** 7
     9. $\forall y \, (G(y) \to y=b)$ ✔ ▽ **∧ Elim:** 7

      10. $\boxed{c}$ ▽ $F(c) \lor G(c)$

        11. ▽ $F(c)$
        12. $F(c) \to c=a$ ✔ ▽ **∀ Elim:** 6
        13. $c=a$ ✔ ▽ **→ Elim:** 11,12
        14. $c=a \lor c=b$ ✔ ▽ **∨ Intro:** 13

        15. ▽ $G(c)$
        16. $G(c) \to c=b$ ✔ ▽ **∀ Elim:** 9
        17. $c=b$ ✔ ▽ **→ Elim:** 15,16
        18. $c=a \lor c=b$ ✔ ▽ **∨ Intro:** 17

      19. $c=a \lor c=b$ ✔ ▽ **∨ Elim:** 15-18,11-14,
     20. $\forall z \, ((F(z) \lor G(z)) \to (z = a \lor z = b))$ ✔ ▽ **∀ Intro:** 10-19

     21. ▽ $a=b$
     22. $F(b)$ ✔ ▽ **= Elim:** 21,5
     23. $F(b) \land G(b)$ ✔ ▽ **∧ Intro:** 22,8
     24. $\exists x \, (F(x) \land G(x))$ ✔ ▽ **∃ Intro:** 23
     25. $\bot$ ✔ ▽ **⊥ Intro:** 24,3

     26. $a \neq b$ ✔ ▽ **¬ Intro:** 21-25
     27. $F(b) \lor G(b)$ ✔ ▽ **∨ Intro:** 8
     28. $F(a) \lor G(a)$ ✔ ▽ **∨ Intro:** 5
     29. $(F(a) \lor G(a)) \land (F(b) \lor G(b)) \land a \neq b \land \forall z \, ((F(z) \lor G(z)) \to (z = a \lor z = b))$ ✔ ▽ **∧ Intro:** 20,26,27,28
     30. $\exists x \, \exists y \, ((F(x) \lor G(x)) \land (F(y) \lor G(y)) \land x \neq y \land \forall z \, ((F(z) \lor G(z)) \to (z = x \lor z = y)))$ ✔ ▽ **∃ Intro:** 29

  31. $\exists x \, \exists y \, ((F(x) \lor G(x)) \land (F(y) \lor G(y)) \land x \neq y \land \forall z \, ((F(z) \lor G(z)) \to (z = x \lor z = y)))$ ✔ ▽ **∃ Elim:** 7-30,2
32. $\exists x \, \exists y \, ((F(x) \lor G(x)) \land (F(y) \lor G(y)) \land x \neq y \land \forall z \, ((F(z) \lor G(z)) \to (z = x \lor z = y)))$ ✔ ▽ **∃ Elim:** 1,4-31

"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.

- There are other "logically possible worlds" in which Trudeau doesn't exist.

- 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 a necessary being?

- 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.

Is a necessary being *impossible*?

J. N. Findlay:

"The proofs based on the necessities of thought are **universally** regarded as fallacious: it is not thought possible to build bridges between mere abstractions and concrete existence"

J. N. Findlay (1948) "Can God's Existence be Disproved?", *Mind*.

Kant agrees

- 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."

John Hick agrees

"For post-Humean empiricism **can assign no meaning to the idea of necessary existence**, since nothing can be conceived to exist that cannot also be conceived not to exist. **No proposition of the form 'x exists' can be analytically true**."

[N.B. 'analytically true' = first-order necessary]

"God as Necessary Being", *The Journal of Philosophy*, Vol. 57, No. 22/23, 1960

Michael Dummett agrees

… we have not returned to the belief that a priori reasoning can afford us substantive knowledge of fundamental features of the world. Philosophy can take us no further than enabling us to command a clear view of the concepts by means of which we think about the world …

… Reality cannot be said to obey a law of logic; it is **our thinking about reality** that obeys such a law or flouts it.

The Logical Basis of Metaphysics, 1991, pp. 1-2

- Laurence BonJour (after quoting Dummett) states:

"Anyone who has read at all widely in recent analytic philosophy will have no trouble coming up with further examples of this assumption or attitude, which indeed seems very often to be regarded as a mere truism."
(BonJour, *In Defense of Pure Reason*, 1997.)

- N.B. BonJour himself finds this idea just confused.
  - "I am inclined to think that there is no very clear sense to be made of this idea."

Yet …

- Mathematical facts are widely regarded as necessarily true.
  - E.g. 2 + 2 = 4
  - there is no highest prime number, etc.
- Mathematical facts seem to be *about* objects (numbers, sets, etc.)
  - Do numbers exist? If so, then they have necessary existence
  - (They would still be mere abstract objects though, not concrete ones like God.)

Also, logic applies to physics

- Findlay: "…it is not thought possible to build bridges between mere abstractions and concrete existence"

- I.e. logic doesn't govern reality in any way, but only governs our thoughts about reality.

- Yet physicists (Kepler, Galileo, Huygens, Leibniz, Newton, Euler, Maxwell, Planck, Einstein, etc.) found that *logical concepts like necessity apply 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.

Logic in physics
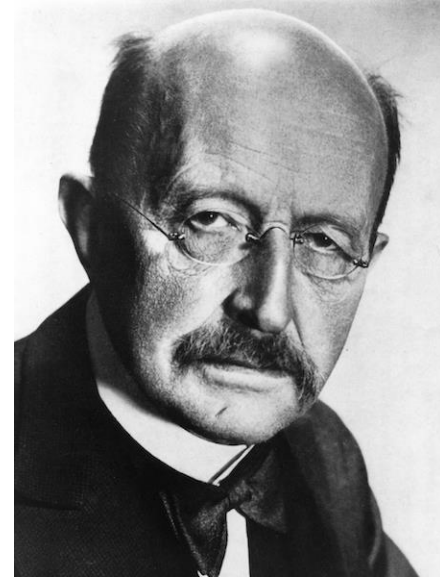
"What led me to my science and what fascinated me from a young age was the, by no means self-evident, fact that *our laws of thought agree with the regularities found in the succession of impressions we receive from the natural world*, that it is thus possible for the human being to gain enlightenment regarding these regularities by means of pure thought …"

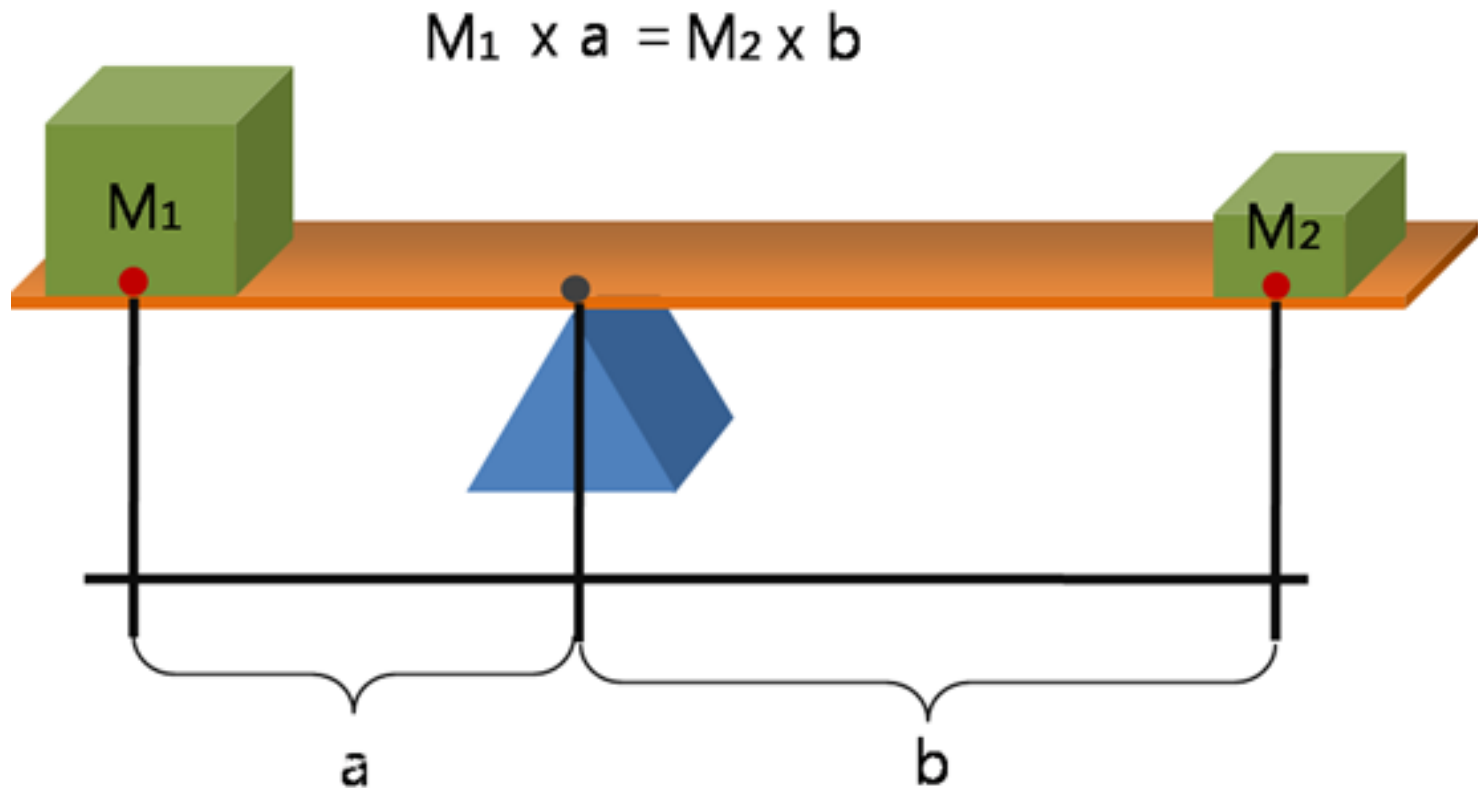Max Planck, *A Scientific Autobiography* (1948)

Physics is rational

"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"

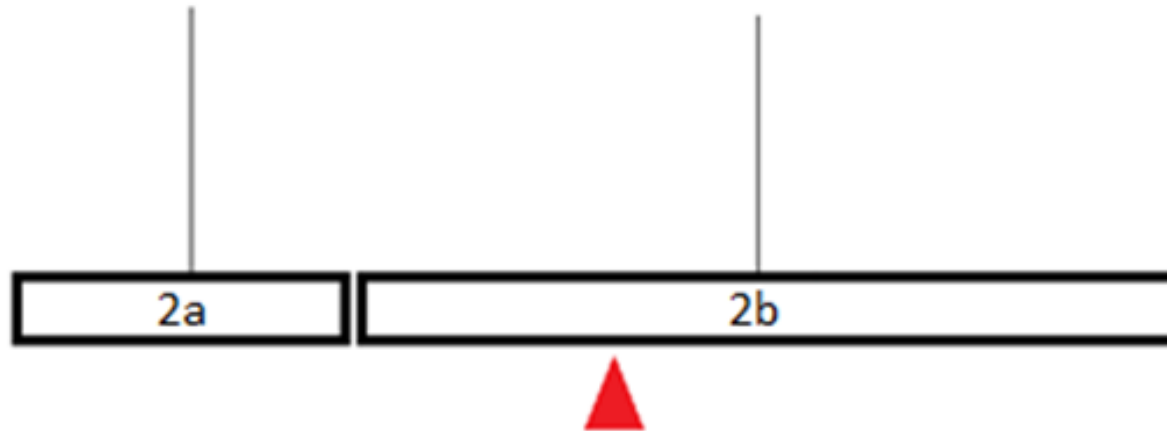Leonhard Euler, *Mechanica*, Preface, 1736.

E.g. the principle of the lever
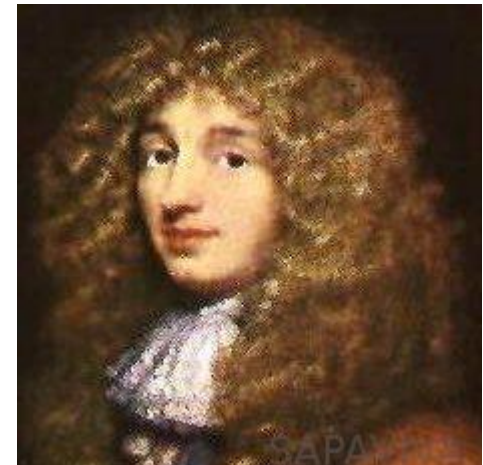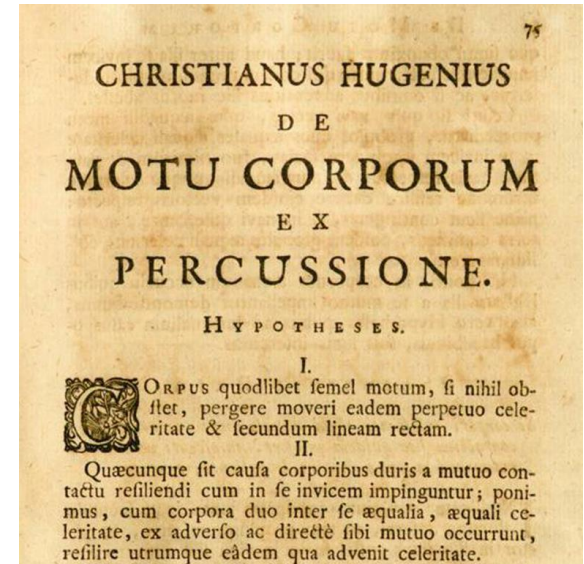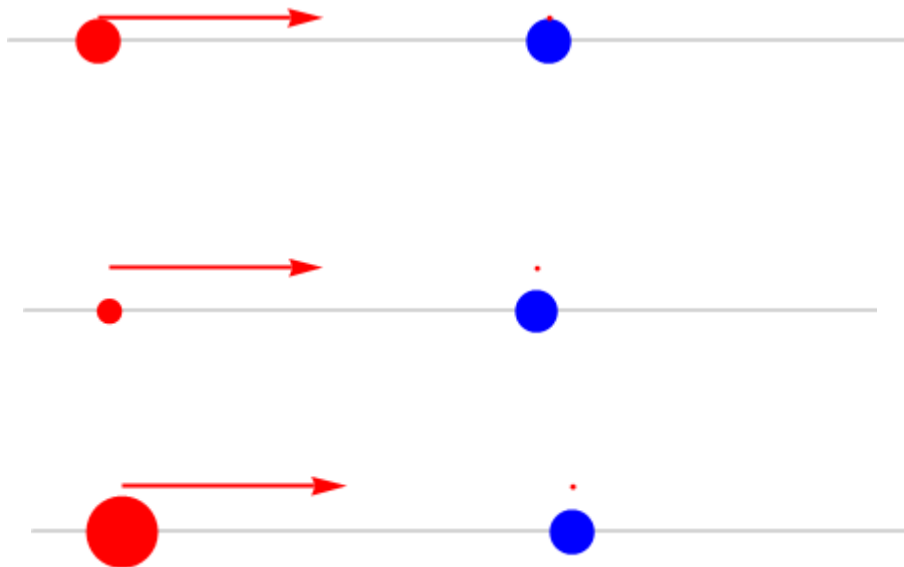
$$M_1 \times a = M_2 \times b$$

- Simon Stevin (1548 – 1620) proved the lever principle, from the assumption that a symmetric cause must have an effect that is symmetric in the same respect.

| 2a | 2b |

Necessary collision laws

In 1669 Huygens showed that the laws of elastic collision logically follow from symmetry principles.

CHRISTIANUS HUGENIUS
DE
MOTU CORPORUM
EX
PERCUSSIONE.

HYPOTHESES.

I.

CORPUS quodlibet femel motum, fi nihil obftet, pergere moveri eadem perpetuo celeritate & fecundum lineam rectam.

II.

Quæcunque fit caufa corporibus duris a mutuo contactu refiliendi cum in fe invicem impinguntur; ponimus, cum corpora duo inter fe æqualia, æquali celeritate, ex adverfo ac directè fibi mutuo occurrunt, refilire utrumque eâdem qua advenit celeritate.

Necessary elliptical orbits
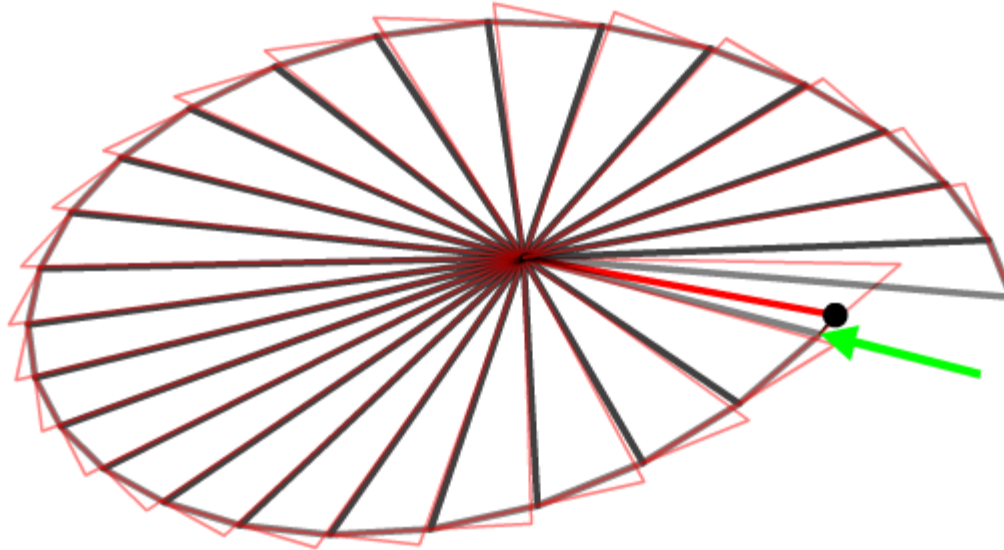
- Newton's theory of inertia, and the $1/r^2$ gravitational force, predicted *elliptical* orbits for the planets.

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*.)

Gödel: "My Philosophical Viewpoint"
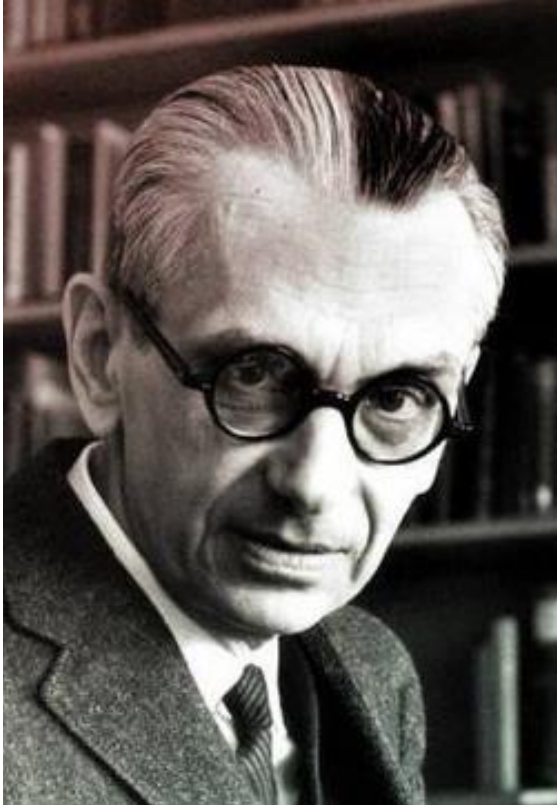
Kurt Gödel

1. The world is rational.

6. There is incomparably more knowable a priori than is currently known.
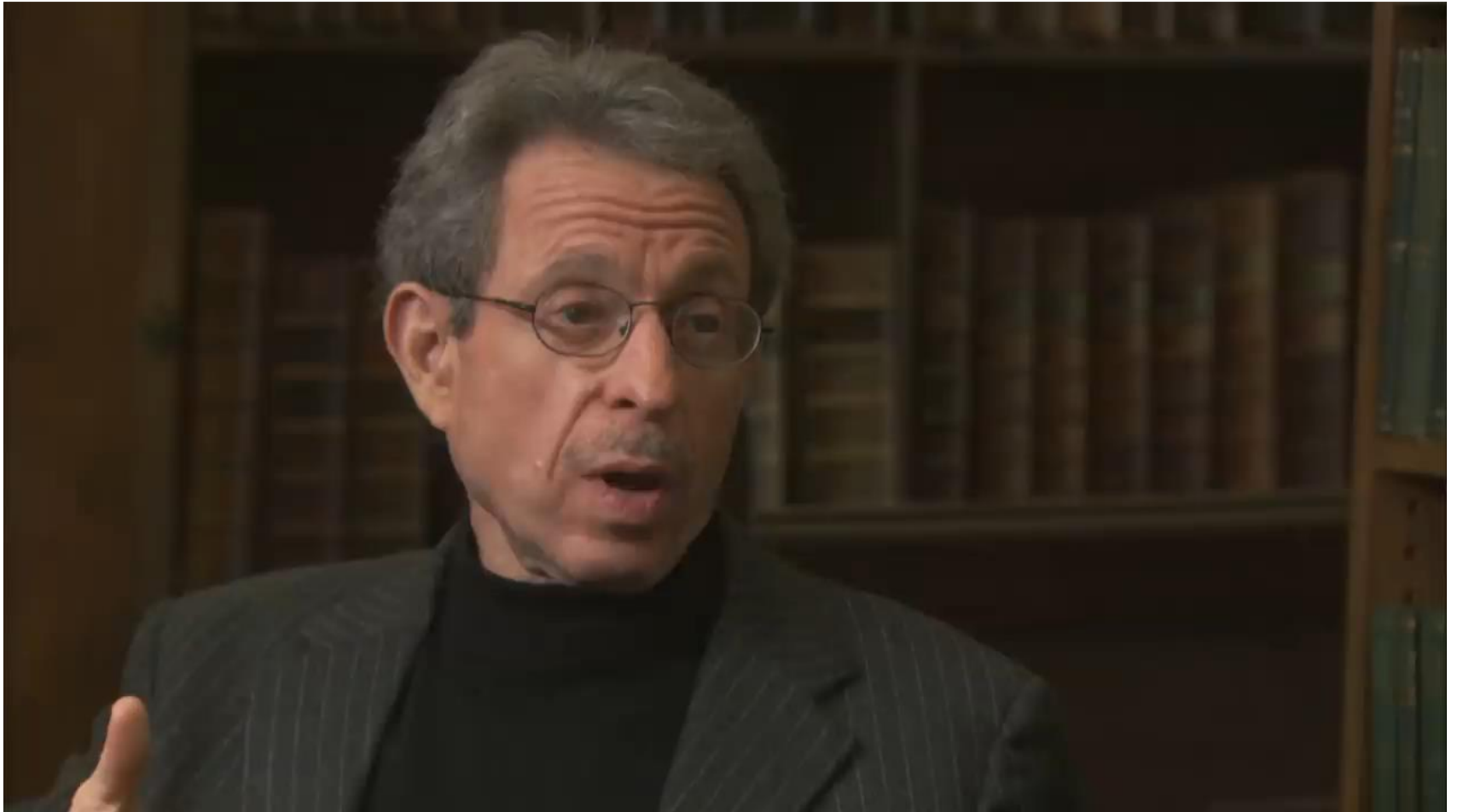
10. Materialism is false.

12. Concepts have an objective existence.

14. Religions are, for the most part, bad – but religion is not.

Roger Penrose:

Math is "inbuilt into the way the world operates"

Part 2

Arguments for a necessary being

Arguments for a necessary being

- Some arguments try to show that there is a necessary being (e.g. God).

- But *what kind of being could exist necessarily*?
  1. A self-existent (uncaused) being?
  2. A being that explains the existence of all contingent beings?
  3. A maximal, or "greatest possible", being?
  4. A being whose mind defines the truths of logic?

1. A self-existent being

- One can argue that a self-existent being must be logically necessary:

1. Every fact has an explanation (Principle of Sufficient Reason)
2. Generally, a fact is explained by logically deducing it from its causes.

∴ An uncaused being cannot be explained, unless it is logically necessary

∴ A self-existent being is logically necessary

What *explains* a necessary being?

- "… 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.)

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'.

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. $NaHCO_3 + CH_3CO_2H \rightarrow CH_3CO_2Na + H_2O + CO_{2\,(g)}$.

(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 would be *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**.

2. A necessary being explains why there are contingent beings (Leibniz)

1. Every contingent fact has an explanation (PSR)
2. There is a total contingent fact **C** that includes all other contingent facts.
3. No fact explains itself

∴ There is an explanation of this fact **C**.

∴ The explanation of **C** cannot involve **C**.

∴ This explanation must involve a necessary being.

∴ A necessary being exists

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 deductive 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: All facts would be necessary

Necessarily, P

Necessarily, if P then Q

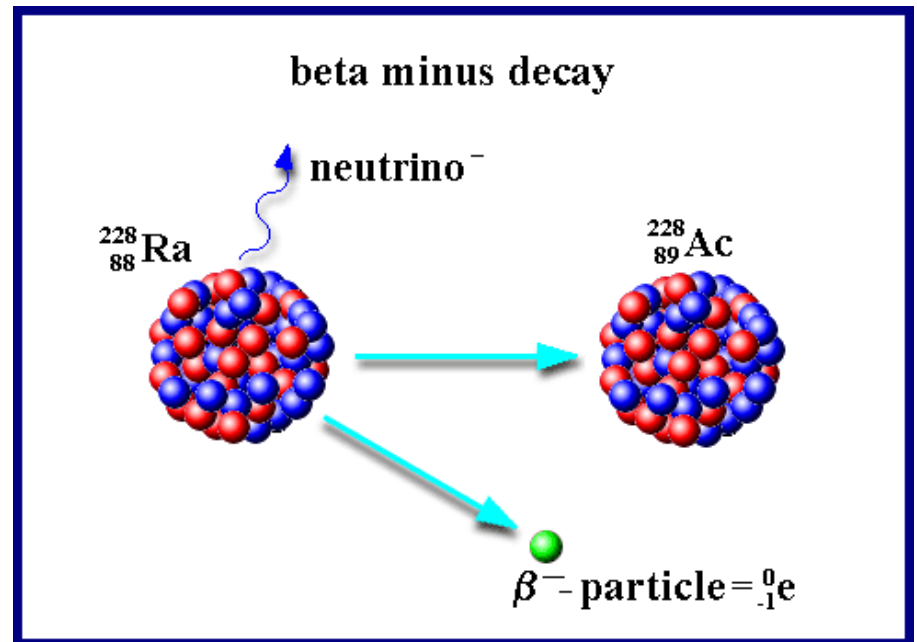∴ Necessarily, Q

□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 β-particle produced in such an event is clear enough. But can we (fully) *explain* the existence of the β-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.

Probabilistic PSR

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

- Determinism arises from the deductive 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 causal context.

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 Probabilistic 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?

Einstein: You're right, we don't know why the universe is comprehensible. But it is.

3. A maximal being is logically necessary

- 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. (from 2)

4. Contradiction (from 3, 1)

∴ God exists in reality. (3, 4)

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.

Aquinas rejects the argument

To the second argument it must be said that he who hears the name "God" may perhaps not know that it signifies "something greater than which cannot be conceived," since some people have thought of God as a body.

Granting, however, that someone should think of God in this way, namely as "that being a greater than which cannot be conceived", **it does not follow on this account that the person must understand what is signified to exist in the world of fact, but only in the mind**. Nor can one argue that it exists in fact unless one grants that there actually exists in fact something a greater than which cannot be conceived. It is, however, precisely this assertion the atheist denies.

- *Summa Theologica*, Qu. 2 Article 1.

- (Aquinas finds the ontological argument very *fishy*, in the way it goes from **concepts** to **reality**.)

Kant's criticism

- Kant also thinks that Anselm's ontological argument has a problem, in the way it goes from **concepts** to **reality**.
- 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".

Kant (*Critique of Pure Reason*)

"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"

Modal Ontological Argument (Gödel, Plantinga)

- 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

   ∴ *G* exists

Proof:

From the premise, *G* exists in at least one possible world *w*. Then by the very concept of *G*, □(*G* exists) holds in *w*. It follows that *G* exists in the actual world. Hence *G* exists. ■

Objections

1. 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.)

2. The argument isn't **intellectually satisfying**.
   - A logically necessary being should be one that, as a matter of logic, *clearly* exists.
   - What kind of a being could be logically derivable in this way? Nothing said so far gives us much of a clue.

The concept of *God* is incoherent?

- God is **omnipotent** (all powerful). So can he create a rock that is too heavy for him to lift?

- If God is **omniscient** (all knowing), then he will know his own actions before he does them. So he can't have free will.

- "**Greatest possible being**" is impossible in the same way as "greatest possible natural number".
  - So, a "**necessary being**" is impossible.

4. A being needed for logic itself?

- The necessary existence of God is seen as problematic, but many other things are thought to exist necessarily:
  - Numbers, sets, vectors, etc.
  - Laws of logic
  - Possible states of affairs, possible worlds (as abstract objects)

- Do these get around Kant's objection to the idea of a necessary being?

Immanuel Kant

- "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."

4. 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"

4. 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, taken for granted, 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 (Platonic Forms) are divine concepts
  - Possible worlds, states of affairs, etc. are divine thoughts

e.g. Thomas Aquinas:

"Even if there were no human intellects, there could be truths because of their relation to the divine intellect. But if, *per impossible*, there were no intellects at all, but things continued to exist, then there would be no such reality as truth." *(De Veritate* Q. 1, Article II, Reply).

- If God provides the very framework for thought, so that without him no thought would exist, then God's existence is a logical necessity. God cannot be rationally conceived not to exist.

E.g. Leibniz

"For in God's understanding all possible things lay claim to existence"

G. W. Leibniz, *Principles of Nature and Grace Based on Reason*, Section 10.

[The wisdom of God] "holds within itself every idea and every truth—that is, everything (simple or complex) that can be an object of the understanding. It includes equally everything possible as well as everything actual. … Each possible world is perfectly known to God, though only one of them has been brought into existence."

G. W. Leibniz, *Making the Case for God in terms of his Justice which is Reconciled with the rest of his Perfections and with all his Actions*, Sections 13-15

- Responses?