

Pascal's Wager

Antony Eagle

antonyeagle.org

God, Faith and Infinity » Lecture 8

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Arguments for God and Rationally Believing in God

Persuasive Argument and Belief in God

- › A **persuasive** argument for or against the existence of God would be a valid argument with premises that are **accepted by the audience**.
- › I assume that it would be **rational to have a belief** whether God exists, if you were in the target audience of a persuasive argument.
- › If nothing else, if you believe the premises of a valid argument with high confidence, then generally you will also assign **fairly high confidence** to the conclusion.
 - › This follows from a result in probability logic due to Adams (1998): in a valid argument, the **improbability** of the conclusion is less than or equal to than the sum of the uncertainties of the premises (Adams 1998). (The improbability of p is $1 - \text{Pr}(p)$, so a highly probable outcome has low improbability, and *vice versa*.)
 - › E.g., if you believe 'There is unjustifiable evil' with 90% confidence/10% improbability, and you believe 'if there is unjustifiable evil then there's no God' with 10% improbability, then you must believe 'there is no God' with **at most** 20% improbability, i.e., 80% confidence.
- › Many of the arguments we've looked at, for and against theism, can be reconstructed as valid, and many are persuasive to limited audiences – but it is fair to say that none have been **generally persuasive** (none have premises everyone accepts).

Reason and Rationality

- › I just endorsed something like this principle:
 - A>R If you believed p on the basis of a generally persuasive argument for p , then your belief in p would be rational.
- › What about this (roughly) **converse** principle?
 - R>A If you had believed p , but not on the basis of a generally persuasive argument for p , then your belief in p would not be rational; Equivalently, if you had a rational belief in p , then you would have believed p on the basis of a generally persuasive argument for p .
- › This seems **incorrect** in many cases.
 - › Knowledge from the senses and knowledge from testimony both don't seem to involve argument.
 - › More relevant, knowledge from arguments that are not generally persuasive – e.g., when you accept the premises but an opponent doesn't, especially if the opponent is being irrational in refusing to accept them.
- › The falsity of R>A provides an opening for theists and atheists alike. Perhaps those might be rationally believed, **even in the absence of generally persuasive argument**.
 - › More or less the theme of this part of the course.

The Incapacity of Reason

- › The French mathematician and theologian Blaise Pascal (1623–62) is even more pessimistic about persuasive arguments in §233 of his *Pensées*:

If there is a God, He is infinitely incomprehensible, since, having neither parts nor limits, He has no affinity to us. We are then incapable of knowing either what He is or if He is....

'God is, or He is not.' But to which side shall we incline? Reason can decide nothing here. ... according to reason, you can defend neither of the propositions. (Pascal 1670: 77)

- › On this view, we can't know enough about God for reason to decide the question of his existence **either way**.
 - ›› The relationship between natural evidence and God – whether it be evidence of adaptation or evidence of unjustified harms, etc. – is too obscure for us to evaluate the force of the evidence.
 - ›› Pascal seems to think that we can't even have plausible arguments for or against God: we might know the evidence, but the linking premises such as *if there are uncompensated evils, then God doesn't exist* cannot be rationally believed, **even by atheists**, because God's nature 'has no affinity to us'.

Suspension

- › In such a case, perhaps the right response to such equal balance of reasons (i.e., equally weak) is to **suspend judgment**:

...because of the equipollence in the opposed objects and accounts, we come first to suspension of judgment. ... By 'equipollence' we mean equality with regard to being convincing or unconvincing: none of the conflicting accounts takes precedence over any other as being more convincing. Suspension of judgment is a standstill of the intellect, owing to which we neither reject nor posit anything. (Sextus Empiricus 2000: I, 8-10)

- › So perhaps we should suspend judgment about whether to believe *God exists* or to believe *God doesn't exist*: 'The true course is not to wager at all' (Pascal 1670: 77).

Deciding Whether to Believe

- › Pascal notes that the choice he's discussing doesn't concern **what** to believe, but **whether** to believe.
- › And if I suspend judgment, I have in fact taken a position on this: I have opted **not to believe that God exists**.
- › In deciding whether to believe, Pascal argues, 'you must wager. It is not optional' (Pascal 1670: 77).
 - › You can't suspend on whether to believe something about God, or not believe something about God – **logic** forces the choice.
 - › You aren't forced to take either one of 'Believe p ' or 'Believe not- p '. But you are forced to do one of 'Believe p ' or 'Don't believe p '.
 - › The difference, logically, between the mutually exclusive and jointly exclusive $Bel(p)$ and $\neg Bel(p)$ vs. the non-exhaustive (and perhaps non-exclusive) $Bel(p)$ and $Bel(\neg p)$.
- › So how do we evaluate whether to believe or to refrain from belief?

Rationality Beyond Reason

- › If reason can't decide, one idea is that we are therefore **allowed** to do either.
Anything Goes If reason and evidence does not demand either believing or refraining from believing that p , then both believing and not believing are rationally permitted.
 - » Since either is permitted, you can toss a coin, or whatever, to break the tie.
- › Pascal **doesn't accept** Anything Goes. He thinks that 'you would be imprudent' (Pascal 1670: 77) if you did not believe in God – that 'you would still be right' (Pascal 1670: 78) if you believe, but wrong if you do not.
- › According to Pascal, there is a standard of **prudence** that makes it **rationally required** to believe in God, even if the evidence doesn't force it.
- › Thus, something other than persuasive argument contributes to rational belief formation – again, $R > A$ is false.

An Ambiguity in 'Reasons to believe'

- › The phrase *reasons to believe* is interestingly **ambiguous**.
 - › A reason to believe that p might be a reason in favour of the **proposition** p – a **cognitive reason** that we have when our evidence supports some hypothesis.
 - › Or it might be a reason in favour of the **activity** of having a certain kind of belief – a **prudential reason** for a certain mental behaviour.
- › We might label this the distinction between 'reasons that evidentially support a belief' and 'reasons to be in a particular state of belief'.
- › *Believing that p* is a mental state, that being in such a state is a fact about someone that can be assigned potential value. If the value of that state would be an improvement on your current state, then there are **prudential** reasons to be in that state, regardless of whether it is narrowly epistemically reasonable or not.

Reasons to be Confident

- › In general, reasons to **do something** (in this case, to **form** a belief) can come apart from **evidential** reasons to accept that some proposition is true.
- › Let's say that a **confident person** is someone who **overestimates** their own chance of success.
- › Maybe more confident people **achieve more**, since they are less likely to hesitate at crucial junctures due to self-doubt.
- › If so, you have reason to be a confident person, and hence to be highly confident that you will succeed in a certain action – even if you lack evidence in favour of your succeeding.
- › Bluntly: **if confidence pays, you have a reason to believe that you are likely to succeed, but no evidence that favours that claim.**
 - › I.e., the evidence supports your success to a certain degree, but there is a reason to be **more confident** than the evidence suggests. This reason must be practical, not cognitive.

Reasons and Control

- › The previous slides raise an important issue: can there be reasons in favour of **being in** states one cannot control?
- › Or put it another way: is it the case that, whenever there is a state that it would **benefit** you to be in, that thereby **exists a reason** to be in that state? Or must you also have **some degree of control** over whether you end up in it?
- › Example: left-handed people sometimes struggle with right-handed scissors. Is that a reason to *be right-handed*, even if 'handedness' is a fixed trait?
 - › It might be a reason, other things being equal, to *learn how to do things with your right hand*, whether you are left-handed or not.
 - › But if you have no control over your handedness, do you have a reason to be right-handed? (Or to have any other fixed traits that are advantageous in our current societal conditions.)
- › In brief: are there **reasons to be** which are not **reasons to do**?

Pascal on Reasons to Believe and Reasons to be a Believer

- › Pascal clearly thinks that there cannot be cognitive reasons to believe in God of the 'evidential support' kind.
 - › That is, he is dubious whether our evidence rationally favours any proposition about God's existence. Our evidence doesn't provide compelling epistemic reasons to adopt any belief on that topic.
- › Yet he does think there can be **prudential reasons to be a believer**, for that activity of belief to be directed at the proposition *God exists*.
 - › Practical reason counsels performing the activity of **believing in God** as opposed to the alternative activity of failing to believe in God.
- › Here the point from the previous slide is important. Many think believing is a state that we cannot control directly – we believe automatically, on the basis of perception or reasoning, etc., but we can't just **decide to believe**.
- › So to argue that there are prudential reasons for belief, it looks like Pascal needs to argue that we have reasons to be in a belief state that we cannot **voluntarily** enter into.

Voluntarism, or Indirect Promotion of Belief?

- › If Descartes and others are right (Ginet 2001; Weatherson 2008), then we can simply decide to believe: to affirm or deny whatever proposition we consider.
 - › **Voluntarism** Belief is under voluntary control, e.g., ‘when our intellect puts something forward for affirmation or denial..., our inclinations are such that we do not feel we are determined by any external force.’ (Descartes 1641: AT 57)
- › Alternatively, we might be able to do something that **conduces** to belief: to do voluntary things that will have the foreseeable consequence that we will come to form a belief.
- › So for example you might be able to voluntarily change your **epistemic environment** – stop reading *The Australian* and start reading *The Guardian*, for example – and that might predictably change your beliefs as you are exposed to certain arguments and pieces of evidence that you wouldn’t have been exposed to otherwise.

Wagering for God

- › Pascal seems to pretty clearly opt for the second route: for him, a reason to be someone who believes in God is a reason to change your epistemic environment in such a way as to naturally promote that belief:

You would like to attain faith and do not know the way; you would like to cure yourself of unbelief and ask the remedy for it. Learn of those who have been bound like you ... who are cured of an ill of which you would be cured. Follow the way by which they began: by acting as if they believed, taking the holy water, having masses said, etc. Even this will naturally make you believe.... (Pascal 1670: 78)

- › Likewise, you could act in such a way as to naturally cause a belief that God doesn't exist.
- › Let us call these **behavioural options** 'Wager for God', and 'Wager against God'.
- › In this light, Pascal is arguing for the rationality of a certain kind of **act**: acting so as to end up in a particular state of belief.

Pascal's Wager and the Nature of Prudential Reason

- › The kind of rationality involved in the evaluation of actions, as opposed to the evaluation of claims, is known as **practical** or **prudential** rationality.
 - » It is concerned with what it is rational to do, rather than with what 'pure reason' regards as well-supported by the evidence.
- › Pascal thinks that, while there is no epistemic reason (or at least, none we can grasp) to believe in God, there is strong prudential reason to perform those **voluntary actions** which will **lead to** one forming the belief.
 - » If you are a doxastic voluntarist, these actions include simply deciding to believe.
- › In prudential reasoning, we are **deciding what to do**. The fundamental basis for any such decision is a judgment that some action is the one that **promotes the best outcomes** for you – that is the one you therefore have most reason to perform.
- › What kind of **framework** for **prudential reason** is being invoked here?

A Theory of Prudential Reason

Decision Problems

- › A **decision problem** is faced when an agent:
 1. Has **ignorance** about what the world is like – ignorance of which of the possible **states of nature** obtain;
 - » These states should be mutually exclusive and jointly exhaustive.
 2. Has **possible actions** they can perform (or **options**);
 3. And these actions interact with the unknown state to yield **outcomes** the agent assigns differing **values** to.
- › Suppose I'm trying to decide whether which café to go to to work in – these are my possible actions.
- › Café A has great coffee, but is really only good for work when it's quiet. Café B has average coffee but is always fine to work in. So I might **rank** the outcomes in terms of their value to me: (1) *Go to Café A and it's not crowded*; (2) *Go to Café B*; (3) *Go to Café A and it is crowded*.
- › I'm ignorant as to whether café A is crowded in the **actual state**.

Decisions under Uncertainty and Risk

- › In the economics literature, if I can assign **probabilities** to quantify my ignorance, I face a **decision under risk**.
- › If I cannot, it is a **decision under uncertainty**.
- › There is less than can be said about decisions under uncertainty – they certainly don't help us decide in the case envisaged.
 - » Had my ranking of outcomes been different, we could have made a rational decision: had Café A been preferable no matter what the state of the world, then it seems rational to go to Café A regardless of my ignorance. In a case like that, when one act is better no matter what, we say it **dominates** the other acts.
- › When we have a decision under risk, we are often able to say more. In the case under discussion, I may be able to make a **judgment** about how likely it is that Café A is crowded, given the time of day, etc.

A Decision in Practice

- › So suppose I draw up a **decision matrix** as follows: I list my actions and the possible states of the world, which yield the possible outcomes (act/state pairs). The outcomes correspond to the cells; what's written in the cell is the value I attach to that outcome.

Table 1: Café decision matrix

| Actions \ States | Café A is Crowded | Café A not Crowded |
|------------------|-------------------|--------------------|
| Go to Café A | Bad | Good |
| Go to Café B | OK | OK |

- › So I think it would be *bad* if this outcome came to pass: the state is that Café A is crowded **and** the act is I go to Café A.
- › No act dominates. So how do I decide?

Decision Rules

Maximax Take the option which can yield the best outcome if things go right. So go to Café A.

Maximin Take the option which avoids the worst outcome if things go wrong. So go to Café B.

Expectation Take the option which has the best probability of a desirable outcome.

- › The first two decision rules only need the decision matrix. The last also needs probabilities assigned to states of nature – either objective risks or subjective levels of confidence.
- › If I am more confident than not that Café A is crowded, I should go to Café B – I think it likely that I will experience something bad otherwise.
 - » This works partly because Café B has the same value to me in both states. Things might look different otherwise.

Expectation made precise: Maximise expected utility

- › To account for the **probabilities** of various act and state pairs, we calculate a quantity for each act called its **expected utility**, which results from **weighing** the value of each possible outcome of the act by its probability.
- › Where where the S_i s are states, Pr is a probability function, and Val records the value I assign to each outcome (combination of act and state):

$$EU^\star(A) = \sum_i \text{Val}(A \wedge S_i) \text{Pr}(S_i).$$

- › For some decisions – how to gamble at the casino! – the probabilities come from physical chances. But often they simply reflect our **subjective** confidence.
- › Having calculated expected utilities, the proposed decision rule is this:
Maximise EU Perform an act which has maximal expected value among your possible acts, by your lights.
 - › A dominating act, when there is one, also maximises expected utility.

The Expected Value of Investing

- › I'm deciding whether to invest money in stocks or bonds. Stocks have higher potential returns and risk; bonds lower potential returns and risk. If the states of nature concern the unknown possibility of a crash, I may get this matrix:

Table 2: Investment decision matrix

| Actions \ States | Crash | No Crash |
|------------------|-------|----------|
| Invest in stocks | -7000 | +10000 |
| Invest in bonds | -1000 | +3000 |

- › On the EU model, if I assign more than 54% confidence to a crash, I should go for bonds – otherwise stocks. E.g, if I am nervous and assign 70% probability to a new crash, the calculations look like this:

$$EU^*(\text{Stocks}) = -7000 \times 0.7 + 10000 \times 0.3 = -1900;$$

$$EU^*(\text{Bonds}) = -1000 \times 0.7 + 3000 \times 0.3 = 200.$$

Prisoner's Dilemma

Tanya and Cinque have been arrested for robbing the Hibernia Savings Bank and placed in separate isolation cells. Both care much more about their personal freedom than about the welfare of their accomplice. A clever prosecutor makes the following offer to each. "You may choose to confess or remain silent. If you confess and your accomplice remains silent I will drop all charges against you and use your testimony to ensure that your accomplice does serious time. Likewise, if your accomplice confesses while you remain silent, they will go free while you do the time. If you both confess I get two convictions, but I'll see to it that you both get early parole. If you both remain silent, I'll have to settle for token sentences on firearms possession charges. If you wish to confess, you must leave a note with the jailer before my return tomorrow morning. (Kuhn 2019)

A Decision Matrix for the Prisoner's Dilemma

- › Suppose we measure the value of outcomes by years in jail (these will be **negative**, since they are years of deprivation of liberty).
- › We model it from Tanya's point of view – for her, Cinque's behaviour is the unknown state of nature, and the payoffs are for Tanya (though **symmetrical** payoffs exist for Cinque).

Table 3: Prisoner's dilemma – Tanya's perspective

| Actions \ States | Cinque confesses | Cinque doesn't confess |
|-----------------------|------------------|------------------------|
| Tanya confesses | -5 | 0 |
| Tanya doesn't confess | -10 | -1 |

- › Note that in this matrix, **no matter what Cinque does**, Tanya does better to confess – it **dominates**.
- › So she should confess! (And so should Cinque, for her parallel decision.)

Not So Fast

- › Note that Tanya doesn't do very well if she confesses and Cinque does too.
- › She can **foresee** that if each reasons as above, and takes the dominant option, they will both confess and do worse than if they both stay quiet.
 - › Bringing in probabilities doesn't change things, since confessing dominates: no matter what Cinque does, Tanya does better to confess.
- › However: surely **cooperation** (both staying quiet) is preferable to both confessing – and seems rational for the **group**, since the **aggregate** payoff is best if both stay quiet.
- › Can the **pair** avoid individual reasoning to this non-optimal joint outcome?
- › One idea: perhaps Tanya can reason to the rationality of not confessing:

Cinque has the same resources as me, and will reason in the same way. So if I conclude 'confess', chances are she will too; and if I conclude 'don't confess', chances are she will too. So if I don't confess, chances are she won't either.

Act-State Dependence

- › This reasoning denies the probabilistic **independence** of acts and states.
- › This prompts a **revision** to our account of expected utility:

$$EU(A) = \sum_i \text{Val}(A \wedge S_i) \underline{\text{Pr}(S_i | A)}.$$

- › We now use the **conditional probability** of states on acts, rather than the unconditional probability of states.
- › When acts and states are independent, this gives the same results as the earlier account, since probabilistic independence between A and B is just **defined** as $\text{Pr}(A | B) = \text{Pr}(A)$.
- › We continue to endorse the **Maximise EU rule**.
- › Note that this doesn't require **causation** between Tanya and Cinque – just **correlation** that gives rise to robust conditional probabilities.

Cooperating in a Prisoner's Dilemma

- › Suppose we assign these conditional probabilities as follows, in line with Tanya's reasoning (these probabilities reflect Tanya's views about how well Tanya's action **predicts** Cinque's action, which is the unknown state):

$$\Pr(\text{C confess} \mid \text{T confess}) = \Pr(\text{C silent} \mid \text{T silent}).$$

- › Given the payoffs, so long as $\Pr(\text{C confess} \mid \text{T confess}) > \frac{5}{7}$, then Tanya should stay silent.
- › E.g., if Tanya is 80% confident that Cinque will act like her, then she ought to stay silent:

$$EU(\text{T confess}) = -5 \times 0.8 + 0 \times 0.2 = -4;$$

$$EU(\text{T silent}) = -10 \times 0.2 - 1 \times 0.8 = -2.8.$$

Pascal's Wager

The Argument from Domination

- › Pascal's decision problem has two states of nature ('God exists', 'God does not exist'), and two actions ('Wager for God', 'Wager against God'), hence **four outcomes**.
- › One approach to this problem uses **dominance**:

Since you must choose, let us see what interests you least. You have two things to lose, the true and the good, and two things to stake, your reason and ... your happiness; and your nature has two things to shun, error and misery. Your reason is no more shocked in choosing one rather than another.... But your happiness? Let us weigh the gain and the loss in wagering that God is. ... If you gain, you gain all; if you lose, you lose nothing. Wager, then, without hesitation that He is. (Pascal 1670: 77)

A Decision Matrix (Hájek 2018: §2)

- › Here is a decision matrix for Pascal's first argument.

Table 4: Pascal Domination Argument decision matrix

| Actions \ States | God exists | God does not exist |
|-------------------|------------|--------------------|
| Wager for God | Gain all | lose nothing |
| Wager against God | Misery | gain nothing |

- › We can see here that, on given these values for acts and outcomes, wagering for God **dominates** wagering against – it is better in every state of nature.
- › But surely this matrix doesn't accurately reflect Pascal's setup, since I want to shun error – I therefore **lose something** when I falsely believe God to exist.
 - › And there are costs involved in 'acting as if you believed' – e.g., purchasing holy water even when one doesn't currently believe it does anything.

A Refined Decision Matrix

- › A decision matrix reflecting the costs of error and the benefits of true belief:

Table 5: Adjusted decision matrix

| Actions \ States | God exists | God does not exist |
|-------------------|------------|--------------------|
| Wager for God | Gain all | Small loss |
| Wager against God | Misery | Small gain |

- › Now wagering for God **no longer dominates** (wagering against is better when God doesn't exist). So if we are to make a decision here, we're going to need to assign probabilities to states of nature.
 - » Do we have act-state independence? Not if the design argument is correct!
- › Pascal seems to consider whether reason dictates 'an equal risk of gain and of loss', i.e., that the 'right' opinion assigns equal probability to each state. But his main argument doesn't depend on a particular probability assignment.

Infinite Gains

- › Pascal makes clear that by ‘gain all’ he is serious:

there is here an infinite of an infinitely happy life to gain, a chance of gain against a finite number of chances of loss, and what you stake is finite. (Pascal 1670: 78)

- › This leads to a final decision matrix:

Table 6: Wager decision matrix

| Actions \ States | God exists | God does not exist |
|-------------------|------------------------|--------------------|
| Wager for God | Infinite gain ∞ | Finite loss f_1 |
| Wager against God | Large loss f_2 | Finite gain f_3 |

The Wager

- › Suppose you assign some probability p to God's existing. Then your expected utilities are:

$$EU(\text{Wager for}) = p \times \infty + (1 - p) \times f_1 = \infty.$$

$$EU(\text{Wager against}) = p \times f_2 + (1 - p) \times f_3 < \infty.$$

- › This is obviously a bit fast and loose, treating infinity as a number – what we should really say is that the expected utility of wagering for God has no finite value:
 $\forall x ((px + (1 - p)f_1) \leq EU(\text{Wager for}))$.
- › Applying our decision rule, Maximise EU, the action we have most reason to perform is to **wager for God**.
 - › This result is independent of the probability of God existing, so long as you assign a **non-zero finite probability** to God existing.
- › Conclusion: **you should wager for God**.

Objections to Pascal's Wager

The Wager Argument

- › The argument in favour of wagering for God has three premises (Hájek 2018: §4):
 1. The decision matrix **above** **correctly represents** the available acts and possible states.
 2. **Epistemic rationality requires** that the probability assigned to God must be non-zero.
 3. **Prudential rationality requires** that we should perform the expected utility maximising act.
- › We might countenance objections to each of these premises.
- › We might also object to the **validity** of the argument, even granting the premises.
 - ›› Actually this is a bit tricky to distinguish from objections to the first and/or third premise in practice, as we will see.

Objecting to the Decision Matrix: Against Infinite Utility

- › Our values, on standard views, **emerge** from our **preferences** among outcomes: if we prefer A to B , and B to C , then we value A more than B , and B more than C .
- › How much more? According to various **representation theorems** (Steele and Stefánsson 2020: §2.2), we can measure the relative value of B , with respect to A and C , by finding a p such that we are **indifferent** between these outcomes:
 1. B for sure;
 2. A with probability p , C with probability $1 - p$.
 - › The idea is that if p is high, then we rank B close to our most preferred option A ; if p is low, we rank B close to our least preferred option C .
- › The problem is: if A has infinite value and B does not, we can't construct such a lottery – any chance of A , no matter how small, will be preferable to B ; but a zero chance of A is equivalent to C for sure – and we prefer B to that.

Objecting to the Decision Matrix: Many Gods

- › Even if we can make sense of infinite utility, many have wondered whether we have the right states.
- › For that 'God does not exist' state encompasses **every alternative** to the Christian God, including the possibility that a demon who **infinitely rewards disbelief in the Christian God** exists (Oppy and Scott 2010: 100–101).
- › If we consider the Demon possible, then there is **also** infinite gain associated with not wagering for God! We don't get a unique best act any more.
- › And we can't stop there – we need to consider in our decision matrix **every possible being capable of bestowing on us infinite utility in response to our behaviour**. It's not clear we ever even get to draw up the matrix, let alone evaluate the expected utilities.

Restricting the Space of Options

- › The ‘many gods’ objection would be powerful if Pascal was intending to offer an all-purpose persuasive argument that would apply to everyone faced with the decision of whether to wager for the Christian God.
- › But it is probably better understood as a **schema**, where the possible acts include only those possibilities that are genuine options for you.
 - › That means: among the many propositions you don’t believe, some are genuine candidates for belief (‘live’), and others are merely hypothetical possibilities.
- › The wager must then be understood to involve only **wagers on live options**, for each wagerer.
 - › For Pascal, who is after all reporting on his own private dilemma, his live options include the existence of traditional Christian god, as well as the non-existence of such a god.
 - › The existence of ancient Greek or Hindu pantheon are not among his live options, even though he would doubtless recognise the theoretical possibility of those deities.
- › When each of us faces the same decision problem, we must include acts for each deity **we** consider a genuine option – but we are not forced to include every logically coherent deity.

Objecting to Positive Probability of God: Pascalian Evidentialism

- › Pascal has argued that reason cannot comprehend God, and that the evidence available to us does not provide an epistemic reason for belief in God.
- › But then why think it provides an epistemic reason to assign any confidence whatsoever to God?
- › Maybe the best thing to do is to simply let one's confidence that God exists go **undefined**.
- › As Hume says, 'a wise man proportions his belief to the evidence' (*Enquiry* 10.4).
- › If the evidence is, as Pascal seems to maintain, of inscrutable relevance to God, then the only way to proportion our belief to that evidence is to **refuse** to assign any probability at all.

Objecting to Positive Probability of God: Rational Zero Credence

- › But we might also think that we need not assign a positive probability to God's existence; and in that case, it is not rationally **obligatory** to wager for God. The **confident atheist** can remain content.
- › Some deny that one should never assign zero probability to any contingent hypothesis, arguing from this principle:
 - Regularity** If Q is possible, then one must assign positive confidence to Q .
- › But Regularity is controversial, indeed many have argued it is **untenable**.
 - › Consider this setup: a fair coin will be tossed infinitely many times: at 0 seconds, 0.5, 0.75, 0.875,.... After 1 second, an infinite series of Heads and Tails has been generated. The probability of this series must be zero – since for any positive probability p , there is some initial segment of our outcome sequence of length n that had lower probability ($\frac{1}{2^n} < p$). But nevertheless it is possible that our sequence occurred (Williamson 2007).

Objecting to Maximise EU: St Petersburg

- › Some say we ought not always maximise expected utility, because doing so can be irrational.
- › Take the **St Petersburg paradox**, in which a coin is tossed until it lands Heads. The states are 'Heads on toss 1', 'Heads on toss 2', etc. The payoff in each state S_n of playing is a return of 2^n ; if you don't play, you get 0 in each state.
- › The expected payoff if you play is infinite:

$$\frac{1}{2} \times 2^1 + \frac{1}{4} \times 2^2 + \frac{1}{8} \times 2^3 + \dots = 1 + 1 + 1 + \dots = \infty.$$

- › Since any finite price to enter still leaves an infinite residual **expected gain**, you should be willing to pay **any amount** to play this game.
 - ›› That is, for any amount of money, paying it to play is still a utility maximising option compared to not playing at all.
- › Yet most of us think that, for many prices, **not playing is rational**, even though it has lower utility.

Objecting to Validity: 'The' Utility Maximising Option

- › Pascal wants to conclude that we must wager for God. But even if we accept that we ought to maximise expected utility, we must note that the rule mentioned in premise 3 of **The Wager Argument** isn't quite the same as the rule **Maximise expected utility**.
- › The rule says perform a utility maximising act. It doesn't say **which**.
- › If we accept the Many Gods objection, we will think there are other acts with infinite expected utility, and hence that it doesn't follow that we must wager for God.

Mixed Acts

- › But even if we only consider one God, other acts still exist – **mixed acts**.
- › A mixed act has this structure: employ chance to select a **pure act** to perform.
 - › Perhaps toss a coin – if it lands heads, wager for God; if tails, wager against.
 - › It is easy to see that the expected utility of this mixed act is **also** infinite, since it is the probability weighted average of the utilities of the pure acts:

$$EU(\text{Toss then wager}) = \frac{1}{2} \times \infty + \frac{1}{2} \times p \times f_2 + (1 - p) \times f_3 = \infty.$$

- › So while wagering for God is a utility maximising act, so too is tossing a coin with some prospect of wagering for God.
 - › So – even – is not wagering for God:

The expected utility of *not* trying to believe in God is also infinite, since there's (arguably) a non-zero probability that you will end up believing in God, even if you are not trying. (Monton 2011: 645)

Anything Goes

Any mixed strategy that gives positive and finite probability to wagering for God will likewise have infinite expectation...

Suppose that you choose to ignore the Wager, and to go and have a hamburger instead. Still, you may well assign positive and finite probability to your winding up wagering for God nonetheless; and this probability multiplied by infinity again gives infinity. So ignoring the Wager and having a hamburger has the same expectation as outright wagering for God. Even worse, suppose that you focus all your energy into avoiding belief in God. Still, you may well assign positive and finite probability to your efforts failing, with the result that you wager for God nonetheless. In that case again, your expectation is infinite again. So even if rationality requires you to perform the act of maximum expected utility when there is one, here there isn't one. Rather, there is a many-way tie for first place, as it were. All hell breaks loose: anything you might do is maximally good by expected utility lights! (Hájek 2018: §5.3)

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