Pascal's Wager

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Pascal's Pragmatic Argument for God

Pascal argues that we are rationally required to believe in God. This is known as **Pascal's Wager.** (Note: it doesn't purport to give us *epistemic* reason for believing in God; rather, it gives us a *pragmatic* reason).

X is an *epistemic* reason for believing that p, if X speaks in favor of p being true.

X is a *pragmatic* reason for believing that p, if X gives us a reason for thinking that it is in our interest to believe that p.

Pascal's Wager

	God Exists	*God Doesn't Exist*
Believe in God	Salvation	Status Quo
Don't Believe	Misery	Status Quo

Hájek points out that Pascal, actually, makes several arguments. We will look at two: the *Dominance Argument*, and the *Expected Value Argument.*

Dominance Argument

1. **Weak Dominance Principle:** If A does at least as well as B in every state of the world, and there is some state of the world in which A does better, then you ought to choose A.
2. **SuperDominance Principle:** If every possible outcome of A is at least as good as the best possible outcome of B, and some possible outcome of A is strictly better than the best outcome of B, then you should choose A.
3. **SuperDominance + Independence?** If A SuperDominates B, and the states of the world are independent of your options, then you should choose A.
4. **SuperDuperDominance Principle:** If every possible outcome of A is *strictly* better than the best possible outcome of B, then you should choose A.

Problem with 1: This principle is false. (Job Application Counterexample).

Problem with 2: This principle is false too. (Annoying Party Guest Counterexample).

Problem with 3: Suppose you *know* which one of the states will obtain, and the outcomes of A and B in those states are equally valuable. Then isn't it permissible for you to choose either?

Problem with 4: Believing in God SuperDuperDominates not believing *only if* you think it's better to be a Believer than a Non-believer *even if God doesn't exist.* Pascal thinks it is. But wouldn't it be more fun to sin?

Expected Value Argument

Another argument goes like this: Believing in God has higher *expected value* than not believing, so you should choose to be a Believer.

Pascal's Wager (Expected Value)

	God Exists	*God Doesn't Exist*
B	∞	f_1
$\neg$**B**	f_2	f_3

Expected Value of Believing:

$$EV(\mathbf{B}) = \Pr(\text{God Is}) \cdot \infty + \Pr(\text{God Isn't}) \cdot f_1 \\ = \infty$$

Expected Value of Not Believing:

$$EV(\neg\mathbf{B}) = \Pr(\text{God Is}) \cdot f_2 + \Pr(\text{God Isn't}) \cdot f_3 \\ = \text{finite}$$

∞ is (obviously) larger than any finite value, so $EV(\mathbf{B}) > EV(\neg\mathbf{B})$. So, you should choose to believe in God.

(1) Rationality requires that you assign some positive probability to *God Exists.* (2) If you assign some positive probability to *God Exists*, then believing has higher expected value than not believing. (3) You should maximize expected value.

Problem of Mixed Strategies. This argument is too quick. We have more options than just **B** and $\neg$**B**, we could employ a *mixed strategy:* e.g., flip a coin, and believe if Heads, disbelieve if Tails.

But *anything* you might choose to do could be consider a mixed strategy between the two, so *everything* has ∞ value! So it's permissible to do anything! (This brings out that the notion of expected value "breaks down" in the presence of infinity).

Coin Bet

	Heads	*Tails*
Sure-Thing	∞	∞
Bet on Heads	∞	0

Intuitively, **Sure-Thing** is better than **Bet on Heads**, but they have the same expected value.

Many Gods Objection. Pascal argues that we are rationally required to believe in God. But which one?

Many Gods Wager

	Generous God	*Rewarding God*	*Weird God*	*No God*
B	∞	∞	f_2	f_1
$\neg$**B**	∞	f_2	∞	f_3

$$EV(\mathbf{B}) = \Pr(\text{GG}) \cdot \infty + \Pr(\text{RG}) \cdot \infty \\ + \Pr(\text{WG}) \cdot f_2 + \Pr(\text{No God}) \cdot f_1$$
$$EV(\neg\mathbf{B}) = \Pr(\text{GG}) \cdot \infty + \Pr(\text{RG}) \cdot f_2 \\ + \Pr(\text{WG}) \cdot \infty + \Pr(\text{No God}) \cdot f_3$$

Proposal for Dealing with Infinities: Replace each '∞' with a variable N. If there is some $n = N$, such that for all $n^* \geq n$, $EV_N(\phi) > EV_N(\psi)$, for all available options ψ, then you rationally ought to choose ϕ.

This is a proposal suggested by Caspar Hare.

$$EV_N(\mathbf{B}) = \Pr(\text{GG}) \cdot N + \Pr(\text{RG}) \cdot N + \Pr(\text{WG}) \cdot f_2 + \Pr(\text{No God}) \cdot f_1$$
$$EV_N(\neg\mathbf{B}) = \Pr(\text{GG}) \cdot N + \Pr(\text{RG}) \cdot f_2 + \Pr(\text{WG}) \cdot N + \Pr(\text{No God}) \cdot f_3$$

And, there is some $n = N$, such that for all $n^* \geq n$, $EV_N(\mathbf{B}) > EV_N(\neg\mathbf{B})$ *only if* $\Pr(RG) > \Pr(WG)$: i.e., only if you are antecedently more confident that there is a god who rewards all and only Believers than you are that there is a god who rewards all and only Non-believers.

Proof. $EV_N(\mathbf{B}) > EV_N(\neg\mathbf{B})$ if and only if $\Pr(\text{GG}) \cdot (N - N) + \Pr(\text{RG}) \cdot (N - f_2) + \Pr(\text{WG}) \cdot (f_2 - N) + \Pr(\text{No God}) \cdot (f_1 - f_3) > 0$. Which holds just in case:

$$\Pr(\text{RG}) \cdot (N - f_2) > \Pr(\text{WG}) \cdot (N - f_2) \\ + \Pr(\text{No God}) \cdot (f_3 - f_2)$$
$$\Pr(\text{RG}) > \Pr(\text{WG}) \cdot \frac{N - f_2}{N - f_2} \\ + \Pr(\text{No God}) \cdot \frac{f_3 - f_2}{N - f_2}$$
$$\Pr(\text{RG}) > \Pr(\text{WG}) + \Pr(\text{No God}) \cdot \frac{f_3 - f_2}{N - f_2}$$

As $N \to \infty$, $\Pr(\text{No God}) \cdot \frac{f_3 - f_2}{N - f_2} = 0$. So, $EV_N(\mathbf{B}) > EV_N(\neg\mathbf{B})$ only if $\Pr(\text{RG}) > \Pr(\text{WG})$.