Objective Probability Functions

Because of the Objective-Subjective Connection (Lecture 6.1.1), some of the conclusions we reached in our discussion of subjective probability carry over to the notion of objective probability.

Recall, in particular, that in Lecture 6.2.1 we considered the hypothesis that you can't count as a perfectly rational agent unless your credence function is a *probability function*. When the Objective-Subjective Connection is in place, that hypothesis entails that an assignment of objective probabilities must also be a probability function, and therefore satisfy the Necessity and Additivity constraints of Lecture 6.2.1.

Problem 1

1/1 point (ungraded)

Suppose we live in a deterministic world? What is the objective probability that a coin toss lands Heads? (Assume that the outcome of the coin toss is determined by the initial conditions of the universe, in conjunction with the laws)

- ( ) 0.5
- (•) either 0 or 1
- ( ) 1

✔

Explanation

The objective probability must be 0 or 1. For a perfectly rational agent with perfect information about the past would be in a position to determine the outcome of the coin toss.

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Does Problem 1 imply "Deterministic world" = there are not probabilistic events?

question posted a day ago by **Jimbof**

In order to share same basic concepts for future discussions,
In corcondance with Problem 1, Do we have to understand that a "deterministic world" implies there are not events based on probabilistic states?

I ask this because there are possible descriptions of "deterministic worlds" who can include probabilistic events like the toss of a coin, where the determination comes from the application of deterministic rules which might be probabilistic, allowing then the final outcome to be also probabilistic.

I'm not discussing the subject, I just would like a clarification.

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1 response

tschrans

a day ago

Yes they stated that at the beginning of the universe it was determined through the initial condition what the result of the coin toss would be. So it's either $P(H) = 1$ or $P(T) = 1$. We just don't know which. The fact that we don't know doesn't mean that it makes $P(H) = 0.5$.

If you call H_i the event of getting heads on the ith time you toss the same coin and T_i the even of getting tails on the ith toss.

You might say if you don't know whether is a heads coin or a tails coin that

$$P(H_1) = P(T_1) = 0.5$$

$$P(H_i|H_1) = 1 \Rightarrow P(T_i|H_1) = 0$$

$$P\left(H_i|T_1\right)=0\Rightarrow P\left(T_i|T_1\right)=1$$

Now I get it TSchrans, Thanks you.

Other than your detailed explanation, nothing like thoroughly reading the enunciate!

LOL!

posted a day ago by **Jimbof**

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