Could a Newcomb Predictor Really Exist?

When someone is first told about Newcomb's Problem, they often worry about whether there could really be an expert of the kind the story requires.

It is certainly *logically possible* for there to be such an expert.

Consider, for example, a super-scientist who creates a molecule-by-molecule duplicate of your body, and makes her prediction by allowing your duplicate to experience a Newcomb case and observing the results. As long as you and your duplicate are subjected to identical stimuli, the two of you should carry out the same reasoning, and reach the same decision. Even taking quantum effects into account, there is no reason such a predictor couldn't be 99% reliable, or more.

Of course, none of this shows that perfect (or near-perfect) predictions are possible in practice. But for our purposes it doesn't matter if the Newcomb case could be carried out in practice or not. We will be using the Newcomb case as a *thought experiment* to help us understand what rational decision-making is all about. So all we really need is for Newcomb cases to be logically possible.

It is also worth keeping in mind that the discussion below won't require perfect, or even near-perfect predictions. As you'll be asked to show in the exercise below, anything better than chance will do. And it is certainly possible to imagine real-life predictors that do better than chance. Consider, for example, a predictor who works with identical twins. She starts by testing the Newcomb setup on one of the twins, and observing the results. She then predicts that the second twin will choose like the first. Even if such a predictor isn't perfectly accurate, one might expect her to do better than chance.

Problem 1

1 point possible (ungraded)

Earlier I suggested that it might be possible to generate better-than-chance Newcomb predictions using identical twins. Describe a different method for doing so.

Done

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