Maximizing Expected Value

In the previous section I tried to give you an intuitive sense of why the Newcomb case might seem puzzling.

Now I will give you some mathematical machinery that will help make the puzzle a little more precise. I will introduce you to *decision theory*.

Suppose that you have different options to choose from. According to the most straightforward form of decision theory, you should make your decision in accordance with the following principle:

> **Principle of Expected Value Maximization**
> Choose an option whose expected value is at least as high as that of any rival option.

The best way of getting a handle on the notion of expected value is to consider an example, and we'll do so shortly. But the intuitive idea is that the expected value of an option is a measure of how desirable the world is expected to be, on the assumption that you choose that option.