Handout 5: Possibility and Necessity

Some things didn't happen, but they could have happened or might have happened. Kerry did not win the last presidential election, but he might have won. You came to class today, but you could have stayed in bed instead. There could have been some things that don't in fact exist. There are no talking donkeys or blue swans, but there might have been. Not everything goes, however. Ephraim is not an alligator, and (arguably) he could not have been one. Uncontroversially, there could not have been any square circles or even primes, and it could not have turned out that Kerry both was and was not the winner.

These are all claims about possibility and necessity; to understand some of the readings and the issues, it is important to get comfortable with these notions.

epistemic, nomological, and metaphysical possibility

Sometimes when we make claims about what is or isn't possible, we have in mind *epistemic* possibility -- what could be the case, holding what we know fixed. "Is it possible that it's raining in New York/Might it be raining in New York?". "No -- I was on the phone to Fred in Manhattan, and he told me it's sunny".

Sometimes when we make claims about what is or isn't possible, we have in mind *nomological* possibility -- what could be or could have been the case, holding the laws of nature fixed. (What we do or do not know is irrelevant.) "Could a body be accelerated beyond c?" "No -- special relativity forbids it". Similarly, it is not nomologically possible for two bodies not to exert a gravitional attraction on each other; it is nomologically possible for there to be a gold sphere a mile in diameter, for there to be rivers of Coca Cola, and for it to be raining in New York (it could have turned out that it was raining in New York, holding the laws of nature fixed).

Sometimes when we make claims about what is or isn't possible, we have in mind *metaphysical* possibility -- what could be or could have been the case in the broadest sense. (Again, what we do or do not know is irrelevant.) If something is nomologically possible, it is metaphysically possible, but not conversely. For example, it is metaphysically possible for a body to accelerate beyond c (surely the world could have turned out such that Newton was right). It is not metaphysically possible that 2+2=5, or that something is both square and circular.

In this course, when we speak of possibility and necessity ("Zombies are possible", "It's necessary that 2=2=4", etc.) we will typically mean the metaphysical kind. The reason why this sort of possibility is important will emerge shortly.

It is clearest to think of possibility and necessity as applying to *propositions*: the proposition that 2+2=5 is not possible, the proposition that it's sunny today is possible, etc. Some useful terminology is illustrated by the figure below.
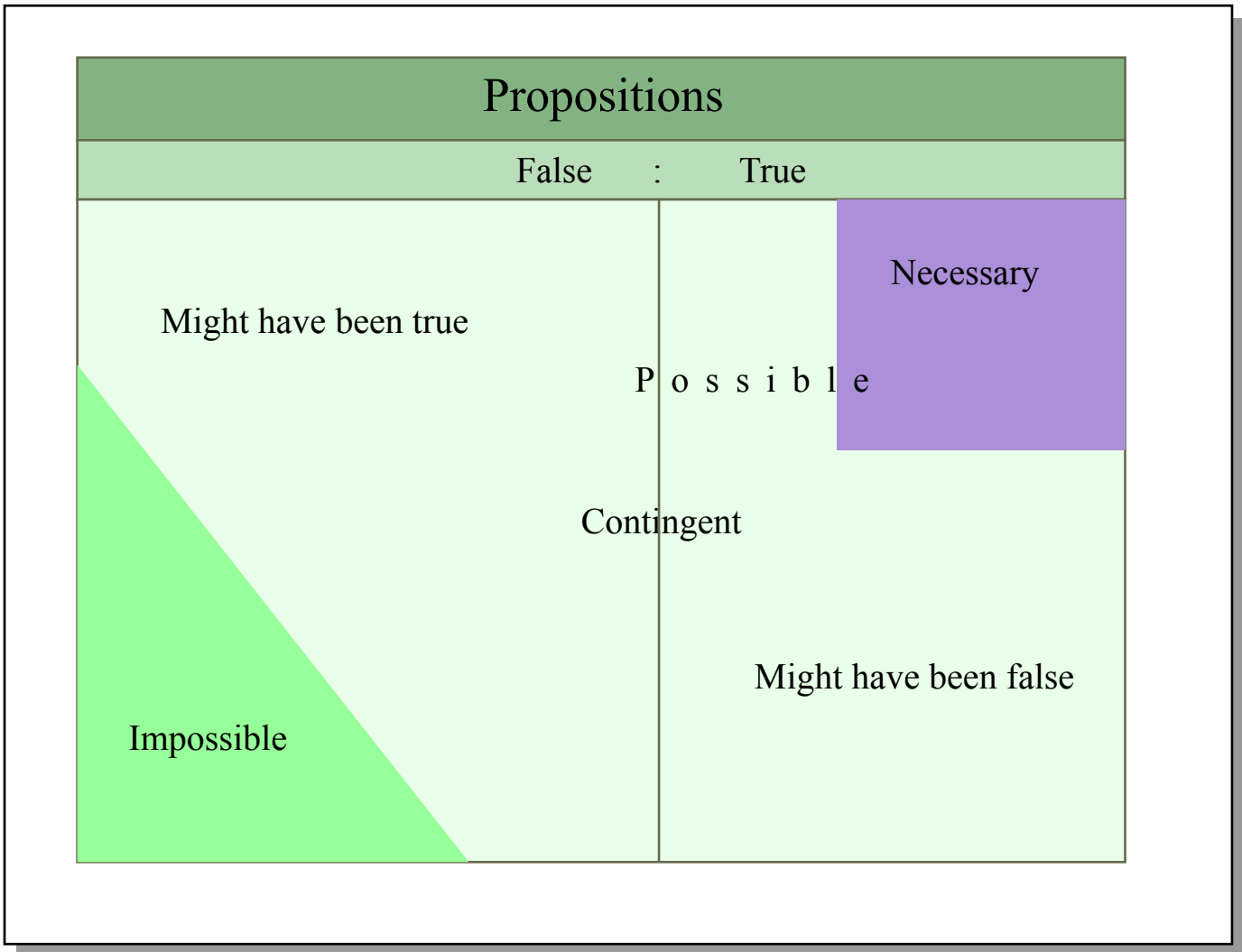
Image by MIT OpenCourseWare.

24.09 Minds and Machines

Fall 2011