Natural Likely

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The use of words “likely” and “unlikely” in natural languages can be formalized as following:

likely => P `P` is likely

Q => ¬likely `Q` is unlikely

Notice that the inversion rule for likely and unlikely is different from that of `true` and `false`.
This rule is because of implication.

(likely => P) = (¬P => ¬likely)

For example, assume it is likely that a smart AI agent survives:

likely => (smart => survive)

If the AI is smart, it will likely survive:

smart => (likely => survive)

If the AI did not survive, it was likely not smart:

¬survive => (likely => ¬smart)
¬survive => (smart => ¬likely)

However, one can not prove the following:

¬smart => (likely => ¬survive)

There can be other ways that makes the AI agent likely to survive besides being smart.

The natural use of words “likely” and “unlikely” is not isomorphic to Logic.
One can not give Logic a different interpretation by swapping `true/false` with `likely/unlikely`.