

- Let $\llbracket A \rrbracket$ be the set of possible worlds at which A is true.
- Suppose $A \Box \rightarrow B$ is true at a world w , as uttered in context c , iff $f(A, w, c) \subseteq \llbracket B \rrbracket$, for some function f , and suppose that $f(A, w, c) \subseteq \llbracket A \rrbracket$.
- Then all counterfactuals with impossible antecedents are true: $\llbracket A \rrbracket = \emptyset$ when A is impossible, so $f(A, w, c) = \emptyset$, and thus $f(A, w, c) \subseteq \llbracket B \rrbracket$, regardless of B .

Why the orthodoxy?

D. Lewis, *Counterfactuals*, p. 25:

We have to explain why things we do want to assert are true (or at least why we take them to be true, or at least why we take them to approximate to truth), but we do not have to explain why things we do not want to assert are false. We have plenty of cases in which we do not want to assert counterfactuals with impossible antecedents, but so far as I know we do not want to assert their negations either. Therefore they do not have to be made false by a correct account of truth conditions; they can be truths which (for good conversational reasons) it would always be pointless to assert.

Defending the orthodoxy I: deny the intuition?

T. Williamson, 'Counterpossibles':

[I]n our unreflective assessment of counterfactual conditionals, we use a simple heuristic along these lines:

- Given that β is inconsistent with γ , treat $\alpha \Box \rightarrow \beta$ as inconsistent with $\alpha \Box \rightarrow \gamma$ [, or]
- If you accept one of $\alpha \Box \rightarrow \beta$ and $\alpha \Box \rightarrow \neg\beta$, reject the other.

... Our impression that [some counterpossibles are] false can be explained by our reliance on a fallible heuristic.

Defending the orthodoxy II: explain the intuition away?

- The tallest building in the world is in Dubai, in the United Arab Emirates.
- The second tallest building in the world is in Shanghai, in China.

P+R If Dubai and Shanghai had had the same name, then the two tallest buildings in the world would have been in the same city.

P-R If Dubai and Shanghai had had the same name, then the two tallest buildings in the world would not have been in the same city.

P+N If Dubai and Shanghai had had the same name, then mosquitoes would have been extinct by now.

P-N If Dubai and Shanghai had had the same name, then mosquitoes would not have been extinct by now.

I+R If Dubai and Shanghai had been the same city, then the two tallest buildings in the world would have been in the same city.

I-R If Dubai and Shanghai had been the same city, then the two tallest buildings in the world would not have been in the same city.

I+N If Dubai and Shanghai had been the same city, then mosquitoes would have been extinct by now.

I-N If Dubai and Shanghai had been the same city, then mosquitoes would not have been extinct by now.

One topic (of five)'s worth of background and sentences

- 121 participants, recruited via Mechanical Turk with a past approval rate of 95% or more required.
- Two participants did not complete the survey; they've been excluded.
- For each of five topics (in fixed order), each participant saw one possible-antecedent sentence and one impossible-antecedent sentence, randomly selected and in random order.

Administration

The sentence is definitely true.	DT	1
The sentence is probably true.	PT	.5
I can't say whether the sentence is true or false.	CS	0
The sentence is probably false.	PF	-.5
The sentence is definitely false.	DF	-1
I don't understand the sentence.	DU	0

Answer choices and scoring scheme

- If the Resolute Desk had been made of stone, then it would not have weighed any more than 500 pounds.
DT: 2 PT: 1 CS: 2 PF: 8 DF: 21 DU: 0 Mean score: -0.66
- If the Resolute Desk had been made of stone, then frogs would have been able to fly.
DT: 0 PT: 0 CS: 5 PF: 0 DF: 24 DU: 1 Mean score: -0.8
- If Dubai and Shanghai had been the same city, then the two tallest buildings in the world would not have been in the same city.
DT: 3 PT: 2 CS: 5 PF: 3 DF: 31 DU: 3 Mean score: -0.61
- If fifteen had been prime, then Paris would have been in Brazil.
DT: 0 PT: 2 CS: 4 PF: 2 DF: 15 DU: 6 Mean score: -0.52
- If fifteen had been prime, then it would have been evenly divisible by three.
DT: 2 PT: 3 CS: 2 PF: 1 DF: 22 DU: 3 Mean score: -0.58
- If Samuel Clemens hadn't been Mark Twain, then the Earth would have spun out of its orbit.
DT: 1 PT: 0 CS: 4 PF: 1 DF: 16 DU: 4 Mean score: -0.6
- If Samuel Clemens hadn't been Mark Twain, then the Earth would not have spun out of its orbit.
DT: 1 PT: 1 CS: 4 PF: 0 DF: 24 DU: 4 Mean score: -0.66
- If Stephen Curry had been both exactly five feet tall and exactly six feet tall, then ants would have had ten legs.
DT: 0 PT: 0 CS: 5 PF: 0 DF: 22 DU: 5 Mean score: -0.69

Some judged-false counterpossibles

- If the Resolute Desk had been made of stone, then it would have weighed more than 500 pounds.
DT: 22 PT: 4 CS: 1 PF: 0 DF: 1 DU: 0 Mean score: 0.82
- If the Resolute Desk had been made of stone, then frogs would not have been able to fly.
DT: 3 PT: 2 CS: 4 PF: 1 DF: 14 DU: 3 Mean score: -0.39
- If Dubai and Shanghai had been the same city, then the two tallest buildings in the world would have been in the same city.
DT: 20 PT: 0 CS: 3 PF: 1 DF: 1 DU: 0 Mean score: 0.74
- If fifteen had been prime, then Paris would not have been in Brazil.
DT: 2 PT: 1 CS: 5 PF: 1 DF: 7 DU: 6 Mean score: -0.23
- If fifteen had been prime, it would not have been evenly divisible by three.
DT: 18 PT: 2 CS: 1 PF: 2 DF: 9 DU: 3 Mean score: 0.26
- If Stephen Curry had been both exactly five feet tall and exactly six feet tall, then ants would not have had ten legs.
DT: 1 PT: 0 CS: 4 PF: 1 DF: 17 DU: 13 Mean score: -0.46

Their opposite-consequent partners