

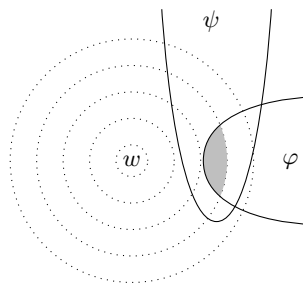
min.1 Introduction

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Stalnaker and Lewis proposed accounts of counterfactual conditionals such as “If the match were struck, it would light.” Their accounts were proposals for how to properly understand the truth conditions for such sentences. The idea behind both proposals is this: to evaluate whether a counterfactual conditional is true, we have to consider those possible worlds which are minimally different from the way the world actually is to make the antecedent true. If the consequent is true in these possible worlds, then the counterfactual is true. For instance, suppose I hold a match and a matchbook in my hand. In the actual world I only look at them and ponder what would happen if I were to strike the match. The minimal change from the actual world where I strike the match is that where I decide to act and strike the match. It is minimal in that nothing else changes: I don’t also jump in the air, striking the match doesn’t also light my hair on fire, I don’t suddenly lose all strength in my fingers, I am not simultaneously doused with water in a SuperSoaker ambush, etc. In that alternative possibility, the match lights. Hence, it’s true that if I were to strike the match, it would light.

This intuitive account can be paired with formal semantics for logics of counterfactuals. Lewis introduced the symbol “ $\Box\rightarrow$ ” for the counterfactual while Stalnaker used the symbol “ $>$ ”. We’ll use $\Box\rightarrow$, and add it as a binary connective to propositional logic. So, we have, in addition to **formulas** of the form $\varphi \rightarrow \psi$ also **formulas** of the form $\varphi \Box\rightarrow \psi$. The formal semantics, like the relational semantics for modal logic, is based on models in which **formulas** are evaluated at worlds, and the satisfaction condition defining $\mathfrak{M}, w \Vdash \varphi \Box\rightarrow \psi$ is given in terms of $\mathfrak{M}, w' \Vdash \varphi$ and $\mathfrak{M}, w' \Vdash \psi$ for some (other) worlds w' . Which w' ? Intuitively, the one(s) closest to w for which it holds that $\mathfrak{M}, w' \Vdash \varphi$. This requires that a relation of “closeness” has to be included in the model as well.

Lewis introduced an instructive way of representing counterfactual situations graphically. Each possible world is at the center of a set of nested spheres containing other worlds—we draw these spheres as concentric circles. The worlds between two spheres are equally close to the world at the center as each other, those contained in a nested sphere are closer, and those in a surrounding sphere further away.



The closest φ -worlds are those worlds w' where φ is satisfied which lie in the smallest sphere around the center world w (the gray area). Intuitively, $\varphi \Box\rightarrow \psi$

is satisfied at w if ψ is true at all closest φ -worlds.

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Bibliography