

Figure 1: Non-vacuously true counterfactual

con:min:tf:
fig:true

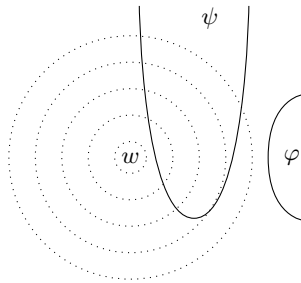


Figure 2: Vacuously true counterfactual

con:min:tf:
fig:vacuous

min.1 Truth and Falsity of Counterfactuals

con:min:tf:
sec

A counterfactual $\varphi \Box \rightarrow \psi$ is (non-vacuously) true if the closest φ -worlds are all ψ -worlds, as depicted in [Figure 1](#). A counterfactual is also true at w if the system of spheres around w has no φ -admitting spheres at all. In that case it is *vacuously* true (see [Figure 2](#)).

It can be false in two ways. One way is if the closest φ -worlds are not all ψ -worlds, but some of them are. In this case, $\varphi \Box \rightarrow \neg\psi$ is also false (see [Figure 3](#)). If the closest φ -worlds do not overlap with the ψ -worlds at all, then $\varphi \Box \rightarrow \psi$. But, in this case all the closest φ -worlds are $\neg\psi$ -worlds, and so $\varphi \Box \rightarrow \neg\psi$ is true (see [Figure 4](#)).

In contrast to the strict conditional, counterfactuals may be contingent. Consider the sphere model in [Figure 5](#). The φ -worlds closest to u are all ψ -worlds, so $\mathfrak{M}, u \Vdash \varphi \Box \rightarrow \psi$. But there are φ -worlds closest to v which are not ψ -worlds, so $\mathfrak{M}, v \not\vdash \varphi \Box \rightarrow \psi$.

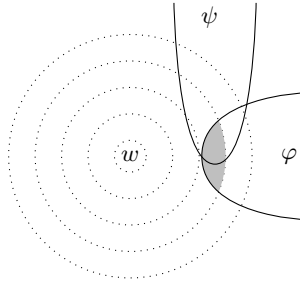


Figure 3: False counterfactual, false opposite

con:min:tf:
fig:false

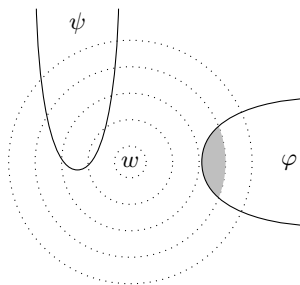


Figure 4: False counterfactual, true opposite

con:min:tf:
fig:false-opposite

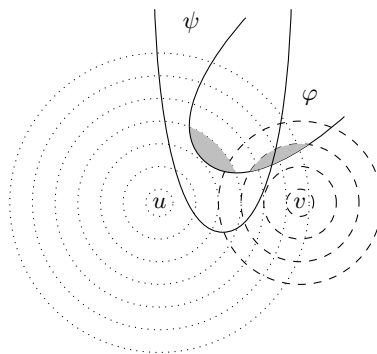


Figure 5: Contingent counterfactual

con:min:tf:
fig:contingent

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Bibliography