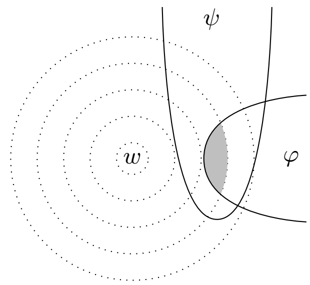

Figure 1: Non-vacuously true counterfactual

con:min:tf:
fig:true

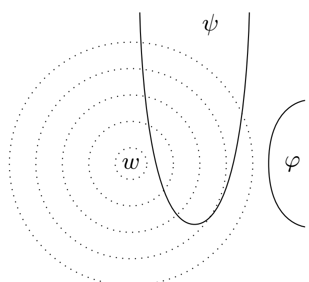

Figure 2: Vacuously true counterfactual

con:min:tf:
fig:vacuous

min.1 Truth and Falsity of Counterfactuals

con:min:tf:
sec

A counterfactual $\varphi \mathrel{\Box\!\!\rightarrow} \psi$ 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, $\varphi \mathrel{\Box\!\!\rightarrow} \neg\psi$ is also false (see Figure 3). If the closest φ-worlds do not overlap with the ψ-worlds at all, then $\varphi \mathrel{\Box\!\!\rightarrow} \psi$. But, in this case all the closest φ-worlds are $\neg\psi$-worlds, and so $\varphi \mathrel{\Box\!\!\rightarrow} \neg\psi$ 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 $\mathfrak{M}, u \Vdash \varphi \mathrel{\Box\!\!\rightarrow} \psi$. But there are φ-worlds closest to v which are not ψ-worlds, so $\mathfrak{M}, v \nVdash \varphi \mathrel{\Box\!\!\rightarrow} \psi$.

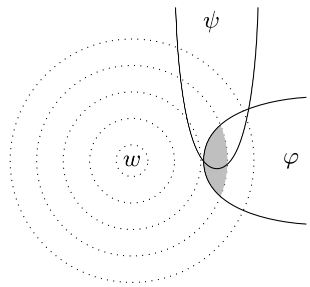

Figure 3: False counterfactual, false opposite

con:min:tf:
fig:false

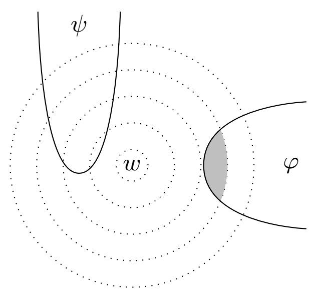

Figure 4: False counterfactual, true opposite

con:min:tf:
fig:false-opposite

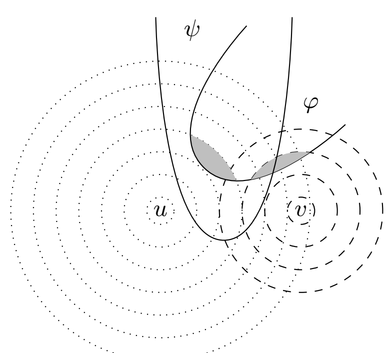

Figure 5: Contingent counterfactual

con:min:tf:
fig:contingent

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Bibliography