A Causal structure

$p(C = \text{true}) = 0.5$

$S = \neg C$ $R = C$

$W = S \vee R$
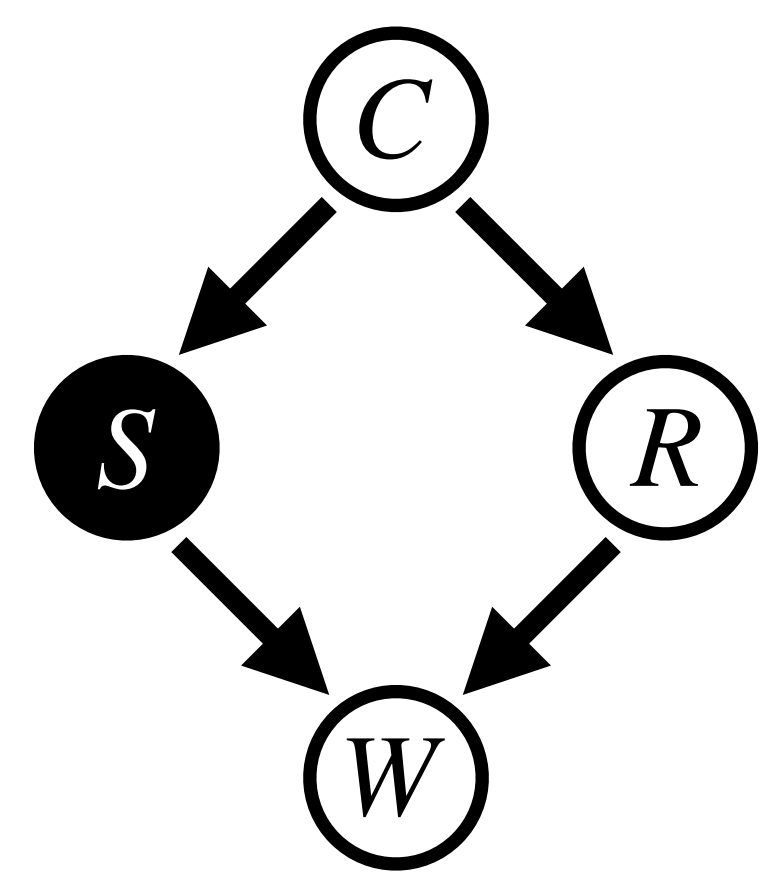
B What actually happened
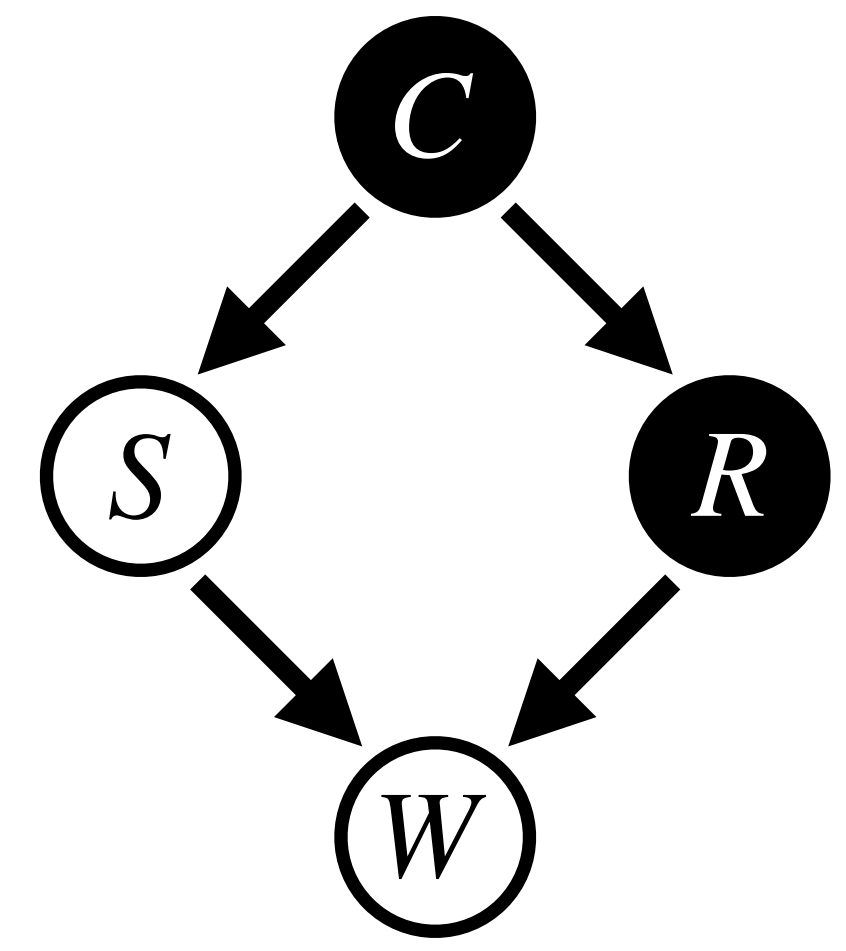
There were no **c**louds, it didn't **r**ain, the **s**prinkler was on, and the grass was **w**et.

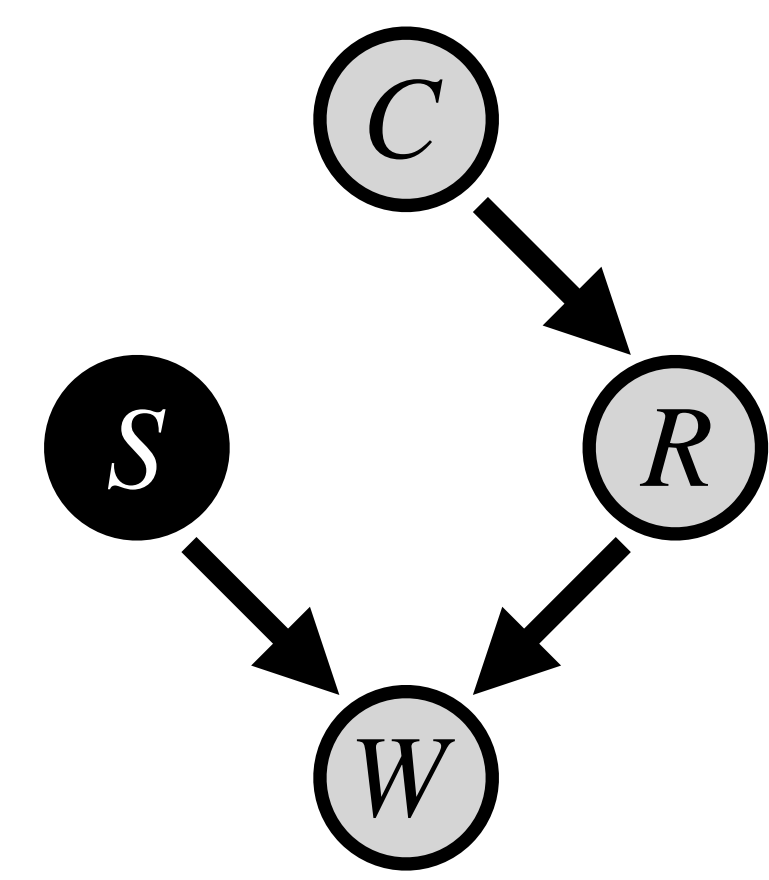Did the sprinkler cause the grass to be wet?

$p(s \to w) = ?$

C Observation (**Level I**)

Is the grass dry when the sprinkler is off?

$p(w' | s') = 0$

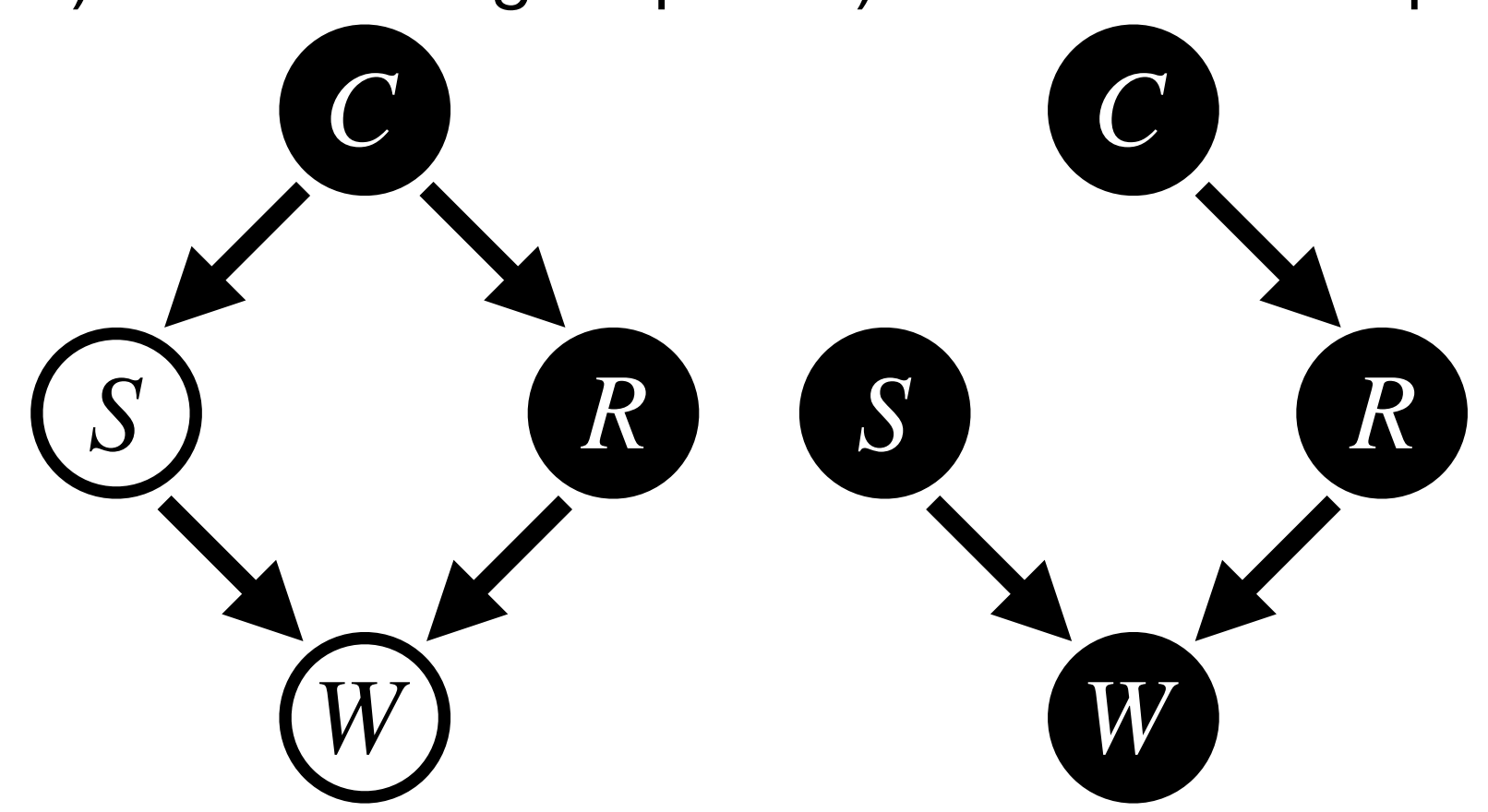**D** Intervention (**Level II**)

Would the grass be dry if the sprinkler was off?

$p(w' | \mathbf{do}(s')) = 0.5$

E Counterfactual (**Level III**)

1) Conditioning step   2) Intervention step

Would the grass have been dry if the sprinkler had been off?

$p(w'_{s'} | c', s, r', w) = 1$

Legend

⬤ = uncertain

◯ = positive

● = negative

↘ = causal link