

Back on track: Backtracking in counterfactual reasoning

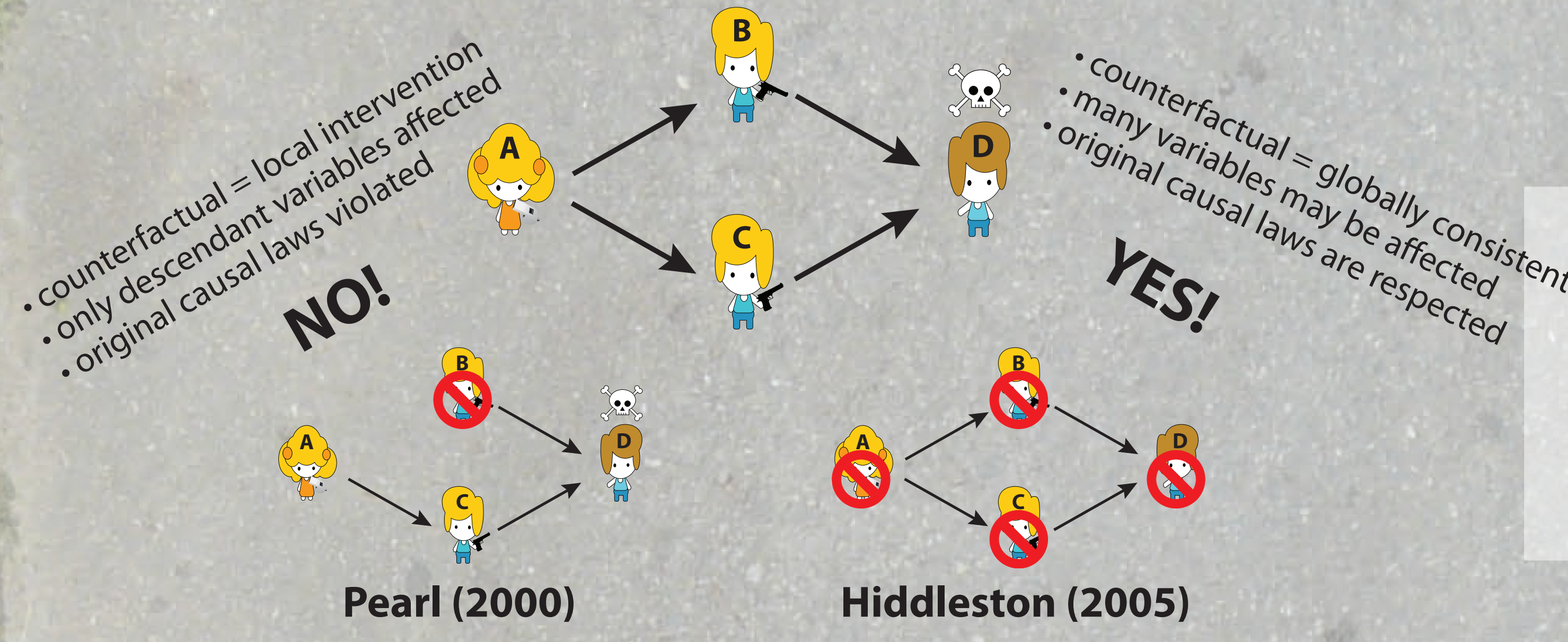
Tobias Gerstenberg, Christos Bechlivanidis & David Lagnado



How do we reason counterfactually?
When do we backtrack? ↻

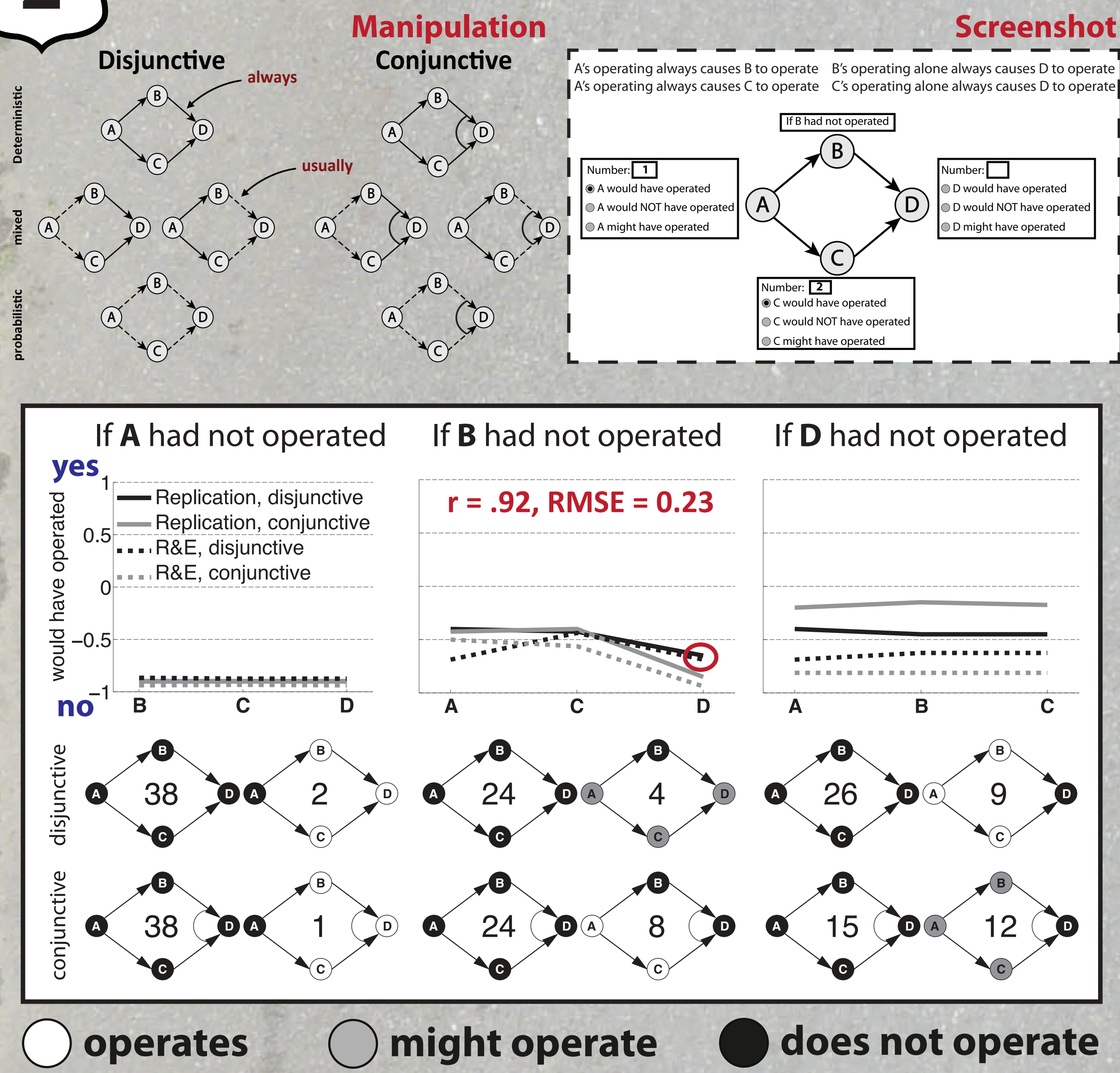
1 What is backtracking?

Would D have survived if B had not shot?



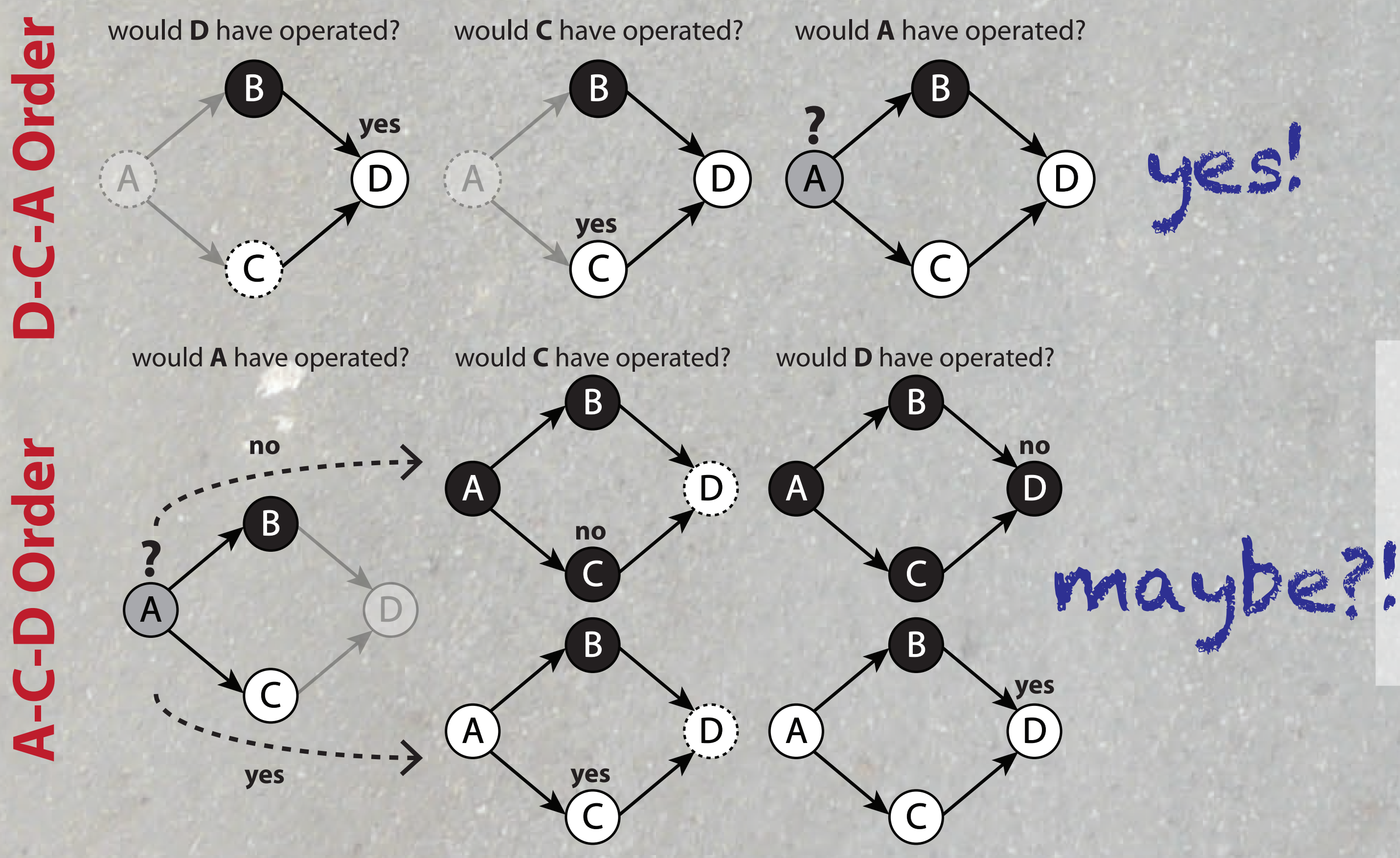
counterfactual world = similar to the actual world

2 Experiment 1: Replication

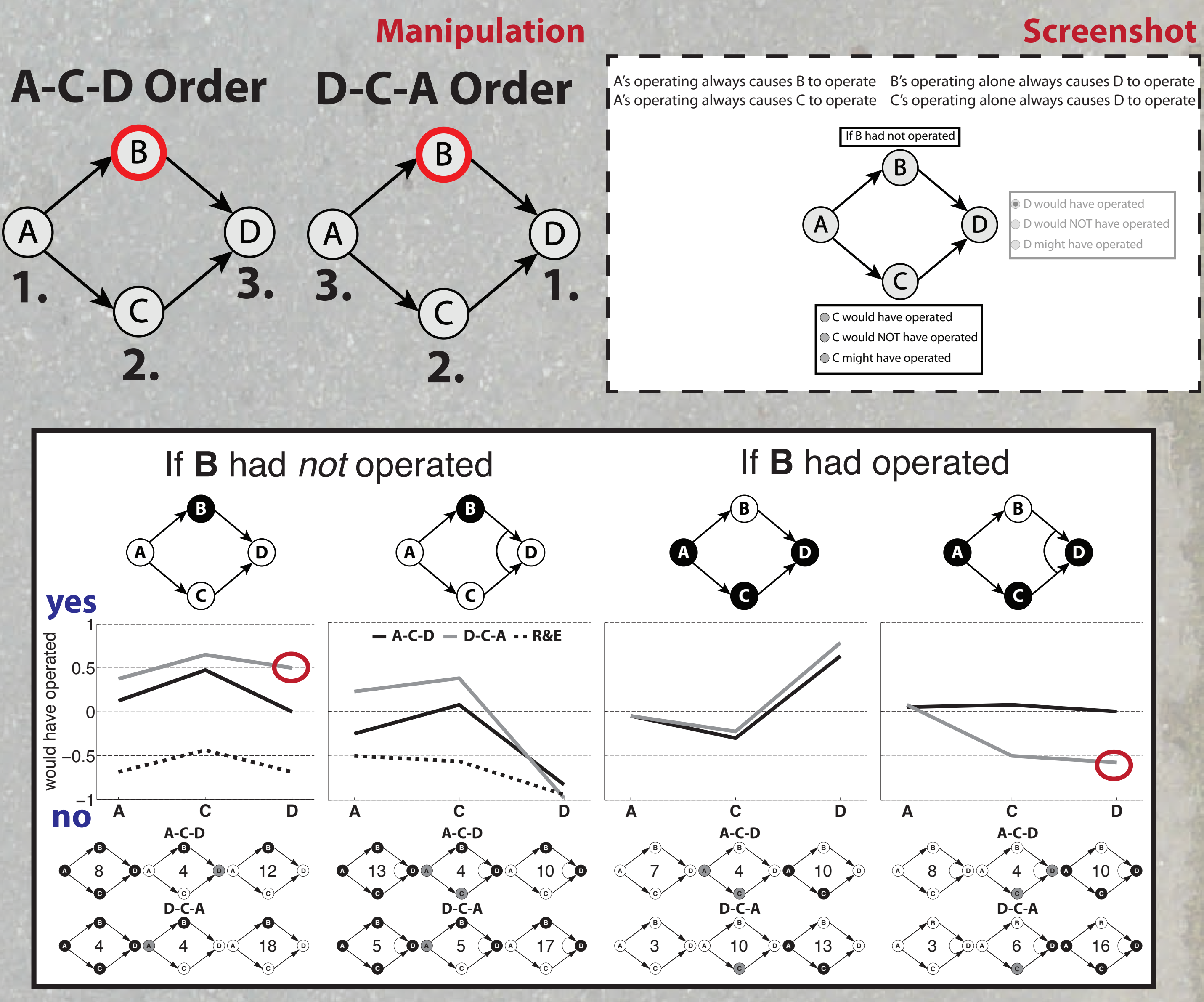


3 Counterfactual reasoning = local or global?

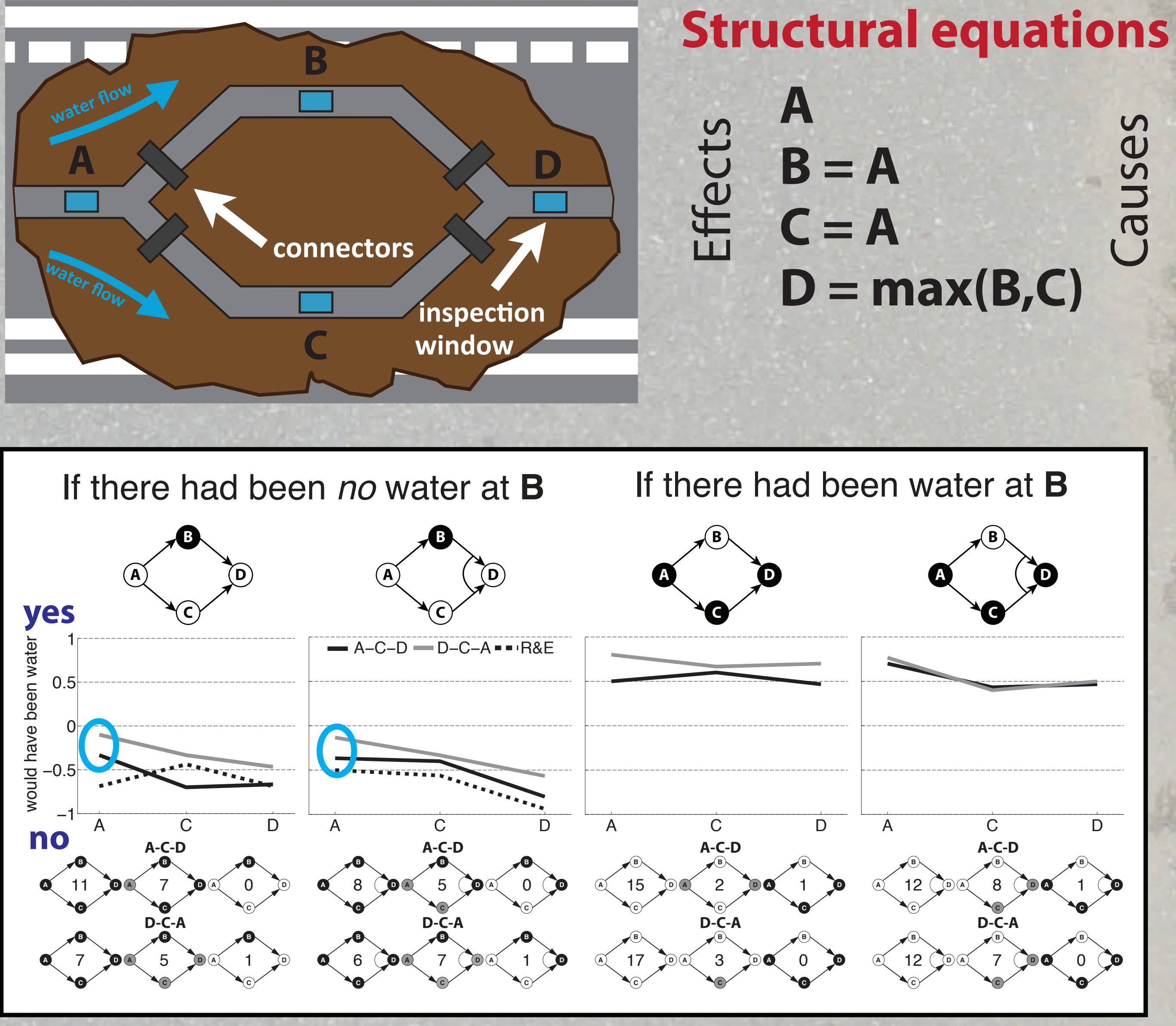
Would D have operated if B had not operated?



4 Experiment 2: Order effects in counterfactual reasoning?



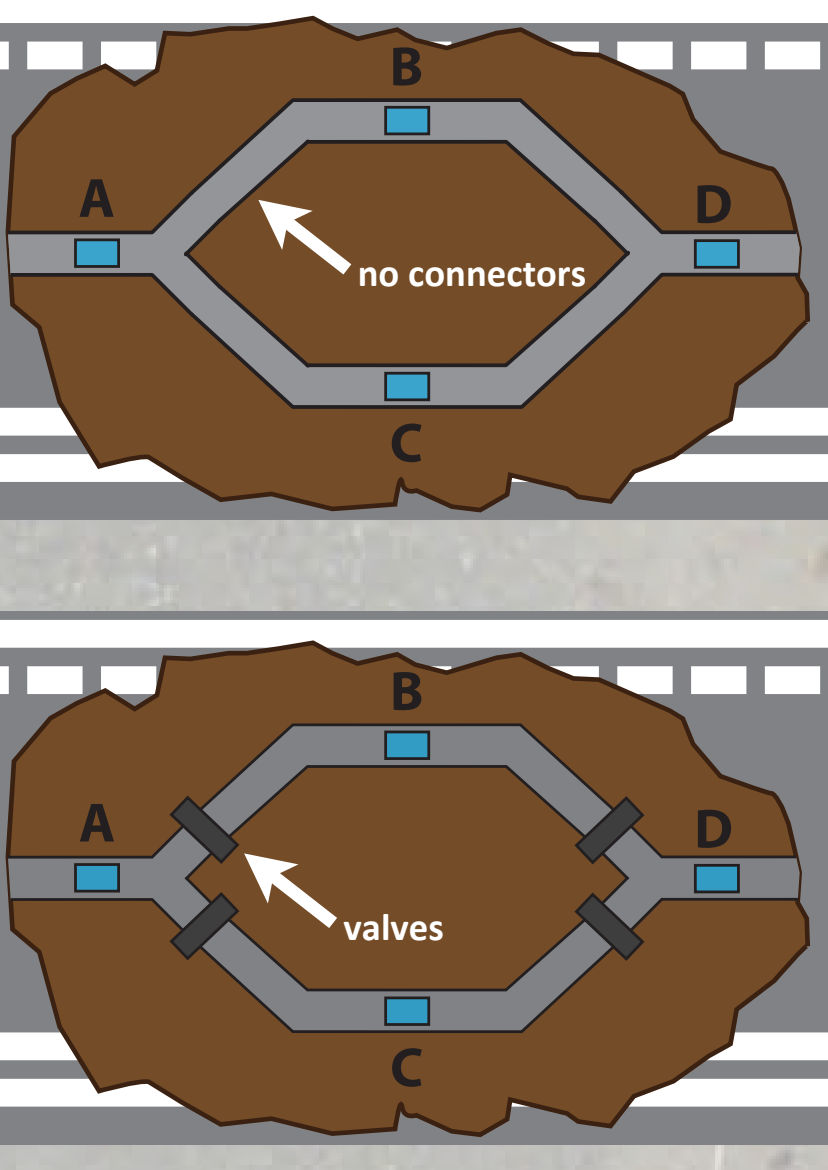
5 Experiment 3: Do people backtrack spontaneously?



66 Discussion

- counterfactual processing is local
- there are situations in which people backtrack spontaneously
- generative models cannot be reduced to structural equations
- counterfactuals cannot be reduced to setting a variable

What's next?



References

Hiddleston, E. (2005). A causal theory of counterfactuals. *Noûs*, 39(4), 632–657.
Pearl, J. (2000). *Causality: Models, reasoning and inference*. Cambridge University Press.
Rips, L. J. & Edwards, B. (in press). Inference and explanation in counterfactual reasoning. *Cognitive Science*.