

Causal inference in the absence of randomization: The target trial framework

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Abstract

Randomized experiments ask a well-defined causal question, describe how to generate the data to answer it, and incorporate randomized assignment to the treatment strategies under study. Observational studies do not incorporate randomized assignment, but there is no reason they should not ask well-defined causal questions. An excessive focus on the lack of randomization has sometimes led some investigators to overlook the importance of well-defined causal questions in observational studies. A consequence is the use of inappropriate data analyses with estimates that are hard to interpret. This talk describes how the target trial framework offers a principled solution to this problem and dissolves the artificial methodological divide between randomized and observational research, revealing that the two share far more common ground than is typically acknowledged. The target trial framework not only guards against common analytical pitfalls in observational research, but it also provides a unifying language for causal inference that spans both randomized experiments and observational studies.