

Chapter 9

PROBABILITY OF CAUSATION: INTERPRETATION AND IDENTIFICATION

*Come and let us cast lots to find out
who is to blame for this ordeal.*

Jonah 1:7

Preface

Assessing the likelihood that one event *was the cause* of another guides much of what we understand about (and how we act in) the world. For example, according to common judicial standard, judgment in favor of the plaintiff should be made if and only if it is “more probable than not” that the defendant’s action was the *cause* for the plaintiff’s damage (or death). But causation has two faces, *necessary* and *sufficient*; which of the two have lawmakers meant us to consider? And how are we to evaluate their probabilities?

This chapter provides formal semantics for the probability that event x was a *necessary* or *sufficient* cause (or both) of another event y . We then explicate conditions under which the probability of neces-

sary (or sufficient) causation can be learned from statistical data, and we show how data from both experimental and nonexperimental studies can be combined to yield information that neither study alone can provide.