Abstract Possible Worlds
by Alvin Plantinga (excerpted from *The Nature of Necessity*, 1974)

1. Worlds

In exploring and explaining the nature of necessity, Leibniz turns to the idea of possible worlds; we can do no better. So we must ask initially what sort of thing a possible world is. The first and rough answer is that it is a way things could have been; it is a way the world could have been; it is a possible state of affairs of some kind. There are such things as states of affairs; among them we find some that obtain, or are actual, and some that do not obtain. So, for example, *Kareem Abdul-Jabbar's being more than seven feet tall* is a state of affairs, as is *Spiro Agnew's being President of Yale University*. Although each of these is a state of affairs, the former but not the latter obtains, or is actual. And although the latter is not actual, it is a possible state of affairs; in this regard it differs from *David's having travelled faster than the speed of light* and *Paul's having squared the circle*. The former of these last two items is causally or naturally impossible; the latter is impossible in that broadly logical sense.

A possible world, then, is a possible state of affairs—one that is possible in the broadly logical sense. But not every possible state of affairs is a possible world. To claim that honour, a state of affairs must be maximal or complete. *Socrates' being snubnosed* is a possible state of affairs; it is not complete or inclusive enough to be a possible world. But what is this 'completeness'? Here we need a couple of definitions. Let us say that a state of affairs $S$ includes a state of affairs $S'$ if it is not possible (in the broadly logical sense) that $S$ obtain and $S'$ fail to obtain—if, that is, the conjunctive state of affairs $S$ but not $S'$ (a state of affairs that obtains if and only if $S$ obtains and $S'$ does not) is impossible. So, for example, *Jim Whittaker's being the first American to climb Mt. Everest* includes *Jim Whittaker's being an American*. It also includes *Mt. Everest's being climbed*, *something's being climbed*, and *no American's having climbed Everest before Whittaker did*. Similarly, a state of affairs $S$ precludes a state of affairs $S'$ if it is not possible that both obtain. Thus *Whittaker's being the first American to climb Mt. Everest* precludes *Luther Jerstad's being the first American to climb Everest* as well as *Whittaker's never having climbed anything*. But now it is easy to say what completeness is; a state of affairs $S$ is complete or maximal if for every state of affairs $S'$, $S$ includes $S'$ or $S$ precludes $S'$. And a possible world is simply a possible state of affairs that is maximal. Of course the actual world is one of the possible worlds; it is the maximal possible state of affairs that is actual, that has the distinction of actually obtaining. Obviously at least one possible world obtains. Equally obviously, at most one obtains; for suppose two worlds $W$ and $W'$ both obtained. Since $W$ and $W'$ are distinct worlds, there will be some state of affairs $S$ such that $W$ includes $S$ and $W'$ precludes $S$. But then if both $W$ and $W'$ are actual, $S$ both obtains and does not obtain; and this, as they say, is repugnant to the intellect.
2. Books

It is clear that a proposition like

(1) Socrates is snubnosed

is intimately related to a state of affairs like

(2) Socrates' being snubnosed.

Roderick Chisholm, indeed, thinks the relation so intimate as to constitute identity. As he sees it, there are not two kinds of entities—propositions and states of affairs—but only one; propositions just are states of affairs. Perhaps he is right. Without entering that question, we may note that in any event there is an obvious respect in which (1) corresponds to (2); it is impossible, in that broadly logical sense, that (1) be true and (2) fail to obtain. We might extend the use of 'entails' and say that (1) entails (2). But it is equally impossible that (2) obtain and (1) be false; (2) also entails (1). And obviously for any possible world $W$ and proposition $p$, $W$ entails $p$ or entails the denial of $p$. Now for any possible world $W$, the book on $W$ is the set $S$ of propositions such that $p$ is a member of $S$ if $W$ entails $p$. Like worlds, books too have a maximality property; if $B$ is a book, then for any proposition $p$, either $p$ is a member of $B$ or else not-$p$ is. And clearly for each possible world $W$ there will be exactly one book. There is at least one, since for any world $W$ and proposition $p$, $W$ entails either $p$ or its denial; so the set of propositions entailed by $W$ will be maximal. There is also at most one; for suppose a world $W$ had two (or more) distinct books $B$ and $B'$. If $B$ differs from $B'$, there must be some proposition $p$ such that $B$ contains $p$ but $B'$ contains the denial of $p$. But then $W$ would entail both $p$ and its denial, in which case $W$ would not be a possible state of affairs after all. So each world has its book. Similarly, each maximal possible set of propositions is the book on some world; and the book on the actual world is the set of true propositions. The book on a world $W$ is the set of propositions true in $W$. To say that $p$ is true in a world $W$ is to say that if $W$ had been actual, $p$ would have been true. More exactly, if $p$ is true in $W$, then $W$ entails $p$; it is impossible that $W$ be actual and $p$ be false. The locution 'truth in $W$' (for specific $W$) denotes a property that a proposition has if it is not possible that $W$ obtain and $p$ fail to be true. Truth-in-$W$ is to be explained in terms of truth simpliciter; not vice versa. A proposition is true in the actual world if it is true; it is true in $W$ if it would have been true had $W$ been actual.