

Supplement to “Into the Mainstream of Philosophy” (p. 133)

THERE ARE TWO SORTS of logic you’ll come across. Sometimes logicians do informal logic: “informal” here doesn’t mean “casual”—it means that they talk through their ideas in ordinary English. The contrast is with formal logic, often called “symbolic logic,” which resembles technical science or mathematics: it uses special symbols (which are, however, carefully defined in English!). In this area, logic merges with some of what mathematicians study (though people with mathophobia need not fear the elementary parts of formal logic).

Here’s a tiny and elementary bit of symbolic logic. Let’s use the symbol ‘ \vee ’ to mean (inclusive) *or* (see “The Illogic of English,” p. 108, above). Then the logic formula ‘ $A \vee B$ ’ stands for the sentence we get when we connect the two sentences symbolized by ‘ A ’ and ‘ B ’ with ‘or.’ The symbol ‘ \sim ’ stands for ‘not.’ ‘ $\sim(A \vee B)$ ’ negates the whole sentence ‘ $A \vee B$ ’—the parentheses show that the ‘ \sim ’ negates the whole sentence, rather than just the ‘ A .’ In the sentence ‘ $\sim A \vee B$,’ just the A is negated. Now consider these two sentences, ‘ $\sim(A \vee B)$ ’ and ‘ $\sim A \vee B$.’ Suppose that the truth value of A is TRUE (i.e., that ‘ A ’ is true) and that the truth value of ‘ B ’ is also TRUE. Can you see why the truth value of ‘ $\sim(A \vee B)$ ’ is FALSE, but the truth value of ‘ $\sim A \vee B$ ’ is TRUE? Let ‘ $\&$ ’ stand for ‘and.’ Can you see why whatever the truth values of ‘ A ’ and ‘ B ’ are, the truth values of ‘ $\sim(A \vee B)$ ’ and ‘ $\sim A \& \sim B$ ’ are the same?

There are scores of textbooks in symbolic logic widely available. There is some difference in the symbols they use, but any of them can provide you with an idea of how one begins in symbolic logic.