1.2: Basic Notions - Propositions and Arguments

Reasoning involves claims or statements—making them and backing them up with reasons, drawing out their consequences. Propositions are the things we claim, state, assert.

Propositions are the kinds of things that can be true or false. They are expressed by declarative sentences. (We distinguish propositions from the sentences that express them because a single proposition can be expressed by different sentences. ‘It’s raining’ and ‘Es regnet’ both express the proposition that it’s raining; one sentence does it in English, the other in German. Also, ‘John loves Mary’ and ‘Mary is loved by John’ both express the same proposition.) ‘This book is boring’ is a declarative sentence; it expresses the proposition that this book is boring, which is (arguably) true (at least so far—but it’s only the first page; wait until later, when things get exciting! You won’t believe the cliffhanger at the end of Chapter 3. Mind-blowing.).

Other kinds of sentences do not express propositions. Imperative sentences issue commands: ‘Sit down and shut up’ is an imperative sentence; it doesn’t make a claim, express something that might be true or false; either it’s obeyed or it isn’t. Interrogative sentences ask questions: ‘Who will win the World Cup this year?’ is an interrogative sentence; it does not assert anything that might be true or false either.

Only declarative sentences express propositions, and so they are the only kinds of sentences we will deal with at this stage of the study of logic. (More advanced logics have been developed to deal with imperatives and questions, but we won’t look at those in an introductory textbook.)

The fundamental unit of reasoning is the argument. In logic, by ‘argument’ we don’t mean a disagreement, a shouting match; rather, we define the term precisely:

Argument = a set of propositions, one of which, the conclusion, is (supposed to be) supported by the others, the premises.
If we’re reasoning by making claims and backing them up with reasons, then the claim that’s being backed up is the conclusion of an argument; the reasons given to support it are the argument’s premises. If we’re reasoning by drawing an inference from a set of statements, then the inference we draw is the conclusion of an argument, and the statements from which its drawn are the premises.

We include the parenthetical hedge—“supposed to be”—in the definition to make room for bad arguments. Remember, in Logic, we’re evaluating reasoning. Arguments can be good or bad, logically correct or incorrect. A bad argument, very roughly speaking, is one where the premises fail to support the conclusion; a good argument’s premises actually do support the conclusion.

To support the conclusion means, again very roughly, to give one good reasons for believing it. This highlights the rhetorical purpose of arguments: we use arguments when we’re disputing controversial issues; they aim to persuade people, to convince them to believe their conclusion. (Reasoning in the sense of drawing inferences from a set of statements is a special case of this persuasive activity. When we draw out reasonable conclusions from given information, we’re convincing ourselves that we have good reasons to believe them.) As we said, in logic, we don’t judge arguments based on whether or not they succeed in this goal—there are logically bad arguments that are nevertheless quite persuasive. Rather, the logical enterprise is to identify the kinds of reasons that ought to be persuasive (even if they sometimes aren’t).