Logic of Science 2.1 NOTES: The Product Rule

January 2, 2016

Abstract

This particular subsection discusses the derivation of the product rule, a result regarding computing the plausibility of a given proposition given the plausibilities of the only other propositions that matter in the computation (when viewed from a logical perspective).

In chapter one the desiderata of our robot were established, as well as basic facts/notation regarding the logic we will use to derive further results. In this subsection we start off with the basic question: how do we compute the plausibility of a proposition such as AB [1] (where A and B happen to be arbitrary propositions).

First, we determine what information would be useful to the computation of this proposition. Through a meticulous derivations perhaps lacking in rigor, a mathematician/logician mentioned in the text determines one and only one of the following pairs of propositions could be useful: $\{A|B, B\}$, $\{B|A, A\}$.

[1] In the text computation of $AB|C$ is discussed: for the time being $|C$ seems to be a superfluous detail