-NoValue-

int.1 Paradoxes of the Material Conditional

cnt:int:par:sec One of the first to criticize the use of $\varphi \rightarrow \psi$ as a way to symbolize "if ... then ..." statements of English was C. I. Lewis. Lewis was criticizing the use of the material condition in Whitehead and Russell's *Principia Mathematica*, who pronounced $\rightarrow$ as "implies." Lewis rightly complained that if $\rightarrow$ meant "implies," then any false proposition p implies that p implies q, since $p \rightarrow (p \rightarrow q)$ is true if p is false, and that any true proposition q implies that p implies q, since $q \rightarrow (p \rightarrow q)$ is true if q is true.

Logicians of course know that *implication*, O.s., logical entailment, is not a connective but a relation between fórmulas or statements. So we should just not read $\rightarrow$ as "implies" to avoid confusion.[1] As long as we don't, the particular worry that Lewis had simply does not arise: p does not "imply" q even if we think of p as standing for a false English sentence. To determine if $p \vDash q$ we must consider *all* valorações, and $p \nvDash q$ even when we use p to symbolize a sentence which happens to be false.

But there is still something odd about "if ... then..." statements such as Lewis's

> If the moon is made of green cheese, then $2 + 2 = 4$.

and about the inferences

> The moon is not made of green cheese. Therefore, if the moon is made of green cheese, then $2 + 2 = 4$.
>
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Yet, if "if ... then ..." were just $\rightarrow$, the sentence would be unproblematically true, and the inferences unproblematically valid.

Another example of concerns the tautology $(\varphi \rightarrow \psi) \vee (\psi \rightarrow \varphi)$. This would suggest that if you take two indicative sentences S and T from the newspaper at random, the sentence "If S then T, or if T then S" should be true.

Créditos das Imagens

Referências Bibliográficas

[1] Reading "$\rightarrow$" as "implies" is still widely practised by mathematicians and computer scientists, although philosophers try to avoid the confusions Lewis highlighted by pronouncing it as "only if."