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Material Implication and Entailment

CLARO R. CENIZA*

The paradoxes of material implication have been called "paradoxes" of a sort because they seem to allow truth to material implications where the antecedents and consequents, respectively, have no relevance to each other. We shall show, however, that in cases of true material implications, their antecedents and consequents, respectively, have some relevance to each other.

"$p \rightarrow q$" is true in three cases: where "$p \cdot q$", "$\sim p \cdot q$" and "$\sim p \cdot \sim q$" are respectively true. Let us import these conjunctions alternately as explicit antecedents of "$p \rightarrow q$" and construct the truth tables of the resulting formulas, as follows:

(1) $(p \cdot q) \rightarrow (p \rightarrow q)$

$(p \cdot q)$	$\rightarrow$	$(p \rightarrow q)$
T	T	T
F	T	F
F	T	T
F	T	T

(2) $(\sim p \cdot q) \rightarrow (p \rightarrow q)$

$(\sim p \cdot q)$	$\rightarrow$	$(p \rightarrow q)$
F	T	T
F	T	F
T	T	T
F	T	T

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