THE RELATION BETWEEN LEWIS'S STRICT IMPLICATION AND BOOLEAN ALGEBRA†

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1. *Introduction.* The purpose of this note is to point out that the relation called "strict implication" in C. I. Lewis's system of logic can be shown to be substantially equivalent to the relation called subsumption ($p<q$) in ordinary Boolean algebra.

The proof hinges upon the establishment of two new theorems, numbered 23.1 and 23.2 below.

2. *Notation.* The principal symbols which occur in the formulas of Lewis's system are the following. [For convenience of printing, we shall use $+$, $'$, and $*$ in place of Lewis's "wedge" ($\vee$), "curl" ($\sim$), and "curl-diamond" ($\sim\Diamond$); and to avoid confusion between Lewis's double use of the sign $=$, we shall replace one of these signs by $\backsim$.]

(1). p, q, r, etc. are *variables*, elements of an undefined class K (interpretable as propositions).

(2). $p\times q$, or simply pq (read: p *times* q), is an object determined in an undefined way by the two elements p and q, and called their logical *product.*

(3). $p+q$ (read: p *plus* q) is an object determined in an undefined way by the two elements p and q, and called their logical *sum.*

(4). p' (read: p *prime*) is an object determined in an undefined way by the element p, and called the *contradictory* of p.

(5). $p\supset q$ (which may be read: p *hook* q) is also an object determined in an undefined way by the elements p and q. It may be called the "*implication* of p toward q."

(6). p^* (which may be read: p *star*) is an object determined in an undefined way by the element p. For lack of a better name, p^* may be called the "*ghost* of p."

(7). $p\backsim q$ (which may be read: p *wave* q) is an object determined in an undefined way by the elements p and q. It may be called the "*equalization* of p and q."

Finally, the elements of the class K are classified into those

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