

**THE CULMINATION
OF THE SCIENCE OF
LOGIC; PP. 1-109**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649444052

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Cover @ 2017

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THE CULMINATION
OF THE
SCIENCE OF LOGIC

WITH SYNOPSES OF

ALL POSSIBLE VALID FORMS OF CATEGORICAL REASONING IN
SYLLOGISMS OF BOTH THREE AND FOUR TERMS.

BY
Choloi's
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PUBLISHED BY
HERBERT C. SMITH,
16 COURT STREET, BROOKLYN, N. Y.

P R E F A C E .

THE following are two chapters of a treatise now in course of preparation, and to be entitled "Logic as a Pure Science, illustrated only by means of symbols indefinite in material, but definite in logical signification, with synopses of all possible valid forms of categorical reasoning in syllogisms of both three and four terms."

The preparation of the treatise was undertaken with but little expectation that it, or any part of it, would ever be published ; and certainly, with no thought of its resulting in any new contribution to the science.

The author had long thought an elementary treatise on Logic as a pure science, with matter wholly eliminated, a desideratum ; and if any such has ever appeared, he is not aware of it. He acknowledges, however, that his acquaintance with the literature of the science is very limited. In writing the treatise, therefore, no concrete examples were employed, but only those with symbols indefinite as to matter, but made definite as to their logical signification.

The symbols adopted were the letters N, D, and J, to

represent the Minor, Middle and Major terms of the Syllogism; they being the middle letters of these words respectively. S, M and P are usually employed, as the initials of Subject, Middle and Predicate, but **S** and **P** are objectionable, being equally applicable to the subject and predicate of the premises (as propositions), in each of which but one occurs in the statement of Syllogisms, and that one in its appropriate place in such representation in both premises, only in Syllogisms in the first figure; in one premise only, in the second and third figures; and in neither, in the fourth; and their dual possible representations tend to confusion. Distribution and non-distribution are signified by the use of capitals to represent terms distributed, and small letters, terms not distributed. Negation, in universal propositions, is indicated by crossing the capital letter representing the subject. The copula is expressed by the characters, “—” for “is,” and “~” for “is not.”

In translating the symbols and characters as employed in propositions into spoken language, the signification of the symbols should of course be *expressed* in respect to the *subject*, but *implied* in respect to the *predicate*, according to common usage and the well-known rules that all universal propositions (and no particular) distribute the subject, and all negative (and no affirmative) the predicate.

Thus the four propositions, A, E, I, O, when written in symbols and characters as above, should be read and understood as follows :

- (A) $D - j$ All D is j (*meaning* All D is *some* J)
 (E) $\bar{D} - J$ No D is J (" No D is *any* J)
 (I) $d - j$ Some D is j (" Some D is *some* J)
 (O) $d \sim J$ Some D is not J (" Some D is not *any* J)

The consideration of Hypotheticals was reached in the preparation of the treatise, and in the course thereof, analyses of conditional propositions of both three and four terms, in all forms in which they can be expressed, were made; and the study of their results led to the gradual unfolding of the doctrine of Sorites contained in the second of the following chapters.

That doctrine is the culmination of the Science of Logic, which without it has hitherto been incomplete.

The treatise, up to this point, had been written wholly in short-hand, and to guard against the possibility that the discovery might be lost if the author should not live to finish it, and the notes should not be deciphered, these chapters were written out in full, and put in position where they would be found and published, in such contingency.

But, inasmuch as the work yet remains to be completed, and the notes to be written out (which can only be done by the author, his system of short-hand being in many respects peculiar), its appearance will be consider-

ably delayed ; and as the discovery, when made known, will, it is believed, not only be an occasion of interest from a scientific point of view, but will prove also to be of practical utility, the author has determined to publish these two chapters in advance. The chapter on Enthymemes is published as preliminary, and to exhibit the synopses therein contained (of which the last shows all valid simple Syllogisms [of three terms] at full length and in regular form), in connection with those contained in the chapter on Sorites (Syllogisms of four terms), thus bringing together, as it were in one view, *all* possible valid forms of categorical reasoning. To those for whose benefit they are thus published the chapters may seem to be unnecessarily diffuse and minute, but to condense them would involve very considerable labor, and they are therefore put forth in the form in which they were written to take their appropriate places in the full treatise, trusting that their minor defects and redundancies may be overlooked.

If the remainder of the treatise shall never appear from the author's pen, there will be little or nothing lost. The suggestion herein made, if it have any merit, will lead other and abler pens to supply the desideratum.

BROOKLYN, *January 14, 1888.*

OF ENTHYMEMES.

§ 1. We have hitherto considered the process of reasoning with three terms, categorically, in its full expression, and have examined all the possible forms of such expression. Such forms are seldom resorted to, either in common conversation or formal discourse, whether spoken or written, but abridged forms of argument are employed in which only part of the process is expressed, the remainder being implied, and being usually so obvious as not to require expression. We come now to consider such abridged forms.

They are called Enthymemes.

§ 2. An Enthymeme is a Syllogism of which but two propositions are expressed, the third being implied.

Enthymemes are of three orders ;

- 1st. That in which the major premise is implied.
- 2d. That in which the minor premise is implied.
- 3d. That in which the conclusion is implied.

The following are examples.

Of the first :

$$\begin{array}{l} N - d ; \\ \therefore N - j. \end{array}$$

Of the second :

$$\begin{array}{l} D - j ; \\ \therefore N - j. \end{array}$$

Of the third :

D — j,
and N — d.

In each case the three terms requisite to make up a full Syllogism appear, and the implied premise or conclusion can be readily supplied.

Enthymemes of the first order are herein called *Minor*, and those of the second order *Major* Enthymemes, from the names of their expressed premises, respectively.

§ 3. As every Enthymeme, together with its implied premise or conclusion, is a Syllogism, it is evident that only such can be valid as are symbolized by the letters by which the expressed propositions are symbolized, in the combinations of vowels symbolizing the propositions of all allowable moods of categorical syllogisms, as hereinbefore shown.

By reference thereto, it will be found that all valid Enthymemes must consist of propositions of which the following are the symbols ; namely,

<i>Of the first order.</i> <i>(Minor Enthymemes.)</i>	<i>Of the second order.</i> <i>(Major Enthymemes.)</i>	<i>Of the third order.</i>
—, A, A;	A, —, A;	A, A, —;
—, A, E;	A, —, E;	A, E, —;
—, A, I;	A, —, I;	A, I, —;
—, A, O;	A, —, O;	A, O, —;
—, E, E;	E, —, E;	E, A, —;
—, E, O;	E, —, O;	E, I, —;
—, I, I;	I, —, I;	I, A, —;
—, I, O;		
—, O, O.	O, —, O.	O, A, —.