THE SUBSTITUTION OF SIMILARS: THE TRUE PRINCIPLE OF REASONING, PP. 4-86

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649494170

The Substitution of Similars: The True Principle of Reasoning, pp. 4-86 by W. Stanley Jevons

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

www.triestepublishing.com

W. STANLEY JEVONS

THE SUBSTITUTION OF SIMILARS: THE TRUE PRINCIPLE OF REASONING, PP. 4-86

Trieste

THE

SUBSTITUTION OF SIMILARS,

The True Principle of Reasoning,

DERIVED FROM A MODIFICATION OF ARISTOTLE'S DICTUM.

BY

W. STANLEY JEVONS, M.A. (LOND.)

PROFESSOR OF LOGIC, ETC. IN OWENS COLLEGE, MANCHESTER.

London:
MACMILLAN AND CO.
1869.

LONDON:
R. CLAY, SONS, AND TAYLOR, PRINTERS,
BREAD STREET HILL.

PREFACE.

IN this small treatise I wish to submit to the judgment of those interested in the progress of logical science a notion which has often forced itself upon my mind during the last few years. All acts of reasoning seem to me to be different cases of one uniform process, which may perhaps be best described as the *substitution of similars*. This phrase clearly expresses that familiar mode in which we continually argue by analogy *from like to like*, and take one thing as a representative of another. The chief difficulty consists in showing that all the forms of the old logic, as well as the fundamental rules of mathematical reasoning, may be explained upon the same principle; and it is to this difficult task I have devoted the most attention. The new and wonderful results of the late Dr.

Boole's mathematical system of Logic appear to develop themselves as most plain and evident consequences of the self-same process of substitution, when applied to the Primary Laws of Thought. Should my notion be true, a vast mass of technicalities may be swept from our logical text-books, and yet the small remaining part of logical doctrine will prove far more useful than all the learning of the Schoolmen.

that Aristotle, however great, should at a single bound have reached the highest generalizations of a closely kindred science of human thought?

4. Kant indeed was no intellectual slave, and it might well seem discouraging to logical speculators that he considered logic unimproved in his day since the time of Aristotle, and indeed declared that it could not be improved except in perspicuity. But his opinions have not prevented the improvement of logical doctrine, and are now effectually disproved. A succession of eminent men,—Jeremy Bentham, George Bentham, Sir William Hamilton, Professor De Morgan, Archbishop Thomson, and the late Dr. Boole,—have shown that in the operations and the laws of thought there is a wide and fertile area of investigation. Bentham did more than assert our freedom of inquiry; in his uncouth logical writings are to be found most original hints, and in editing his papers his nephew George Bentham pointed out the all-important key to a thorough logical reform, the *quantification of the predicate*.[1] Sir William Hamilton, Archbishop Thomson, and Professor De Morgan rediscovered and developed the same new idea. Dr. Boole, lastly, employing this fundamental idea as his starting

[1] See "Outline of a New System of Logic," by George Bentham, Esq., London, 1827, p. 133 *et seq.*

point, worked out a mathematical system of logical inference of extraordinary originality.

5. Of the logical system of Mr. Boole Professor De Morgan has said in his "Budget of Paradoxes:"[1] "I might legitimately have entered it among my *paradoxes*, or things counter to general opinion: but it is a paradox which, like that of Copernicus, excited admiration from its first appearance. That the symbolic processes of algebra, invented as tools of numerical calculation, should be competent to express every act of thought, and to furnish the grammar and dictionary of an all-containing system of logic, would not have been believed until it was proved. When Hobbes, in the time of the Commonwealth, published his 'Computation or Logique,' he had a remote glimpse of some of the points which are placed in the light of day by Mr. Boole. The unity of the forms of thought in all the applications of reason, however remotely separated, will one day be matter of notoriety and common wonder; and Boole's name will be remembered in connexion with one of the most important steps towards the attainment of this knowledge."

6. I need hardly name Mr. Mill, because he has expressly disputed the utility and even the truthfulness of the reforms which I am considering, and

[1] No. xxiii. *Athenæum*.

has evolved most divergent opinions of his own in a wholly different direction from the eminent men just mentioned.

7. In the lifetime of a generation still living the dull and ancient rule of authority has thus been shaken, and the immediate result is a perfect chaos of diverse and original speculations. Each logician has invented a logic of his own, so marked by peculiarities of his individual mind, and his customary studies, that no reader would at first suppose the same subject to be treated by all. Yet they treat of the same science, and, with the exception of Mr. Mill, they start from almost the same discovery in that science. Modern logic has thus become mystified by the diversity of views, and by the complication and profuseness of the formulæ invented by the different authors named. The quasi-mathematical methods of Dr. Boole especially are so mystical and abstruse, that they appear to pass beyond the comprehension and criticism of most other writers, and are calmly ignored. No inconsiderable part of a lifetime is indeed needed to master thoroughly the genius and tendency of all the recent English writings on Logic, and we can scarcely wonder that the plain and scanty outline of Aldrich, or the sensible but unoriginal elements of Whately,