

LOGIC

The word 'logic' as used today is commonly taken to refer to a formal discipline, as indeed it was almost universally from the time of ARISTOTLE until at least the sixteenth century. But the writings of Descartes and his followers (notably Malebranche and the authors of the Port Royal Logic, Arnauld and Nicole) undermined this understanding of the word, preparing the ground for LOCKE to reinterpret it most influentially in his Essay Concerning Human Understanding. Locke adopted from the Cartesians a contempt for the alleged barrenness of Aristotelian syllogistic theory, and aspired to replace it with a discipline focused not on the formal relations of words, but instead on the powers of the human mind and the improvement of our cognitive faculties. It is this kind of informal discipline, therefore, which is most commonly referred to as "logic" by the empiricist authors from Locke to MILL, and indeed their understanding of the logical enterprise persisted until the turn of the twentieth century, when FREGE and RUSSELL firmly reestablished the discipline of formal logic in a new, more powerful, and non-Aristotelian guise.

Locke's own understanding of Aristotelian logic seems to have been drawn not primarily from Aristotle himself or from the medieval schoolmen, but instead from modern scholastic authors such as Robert Sanderson and Philippe du Trieu (see Milton 1984). And this helps to explain both his low regard for its admittedly second-rate supporters, and also the manner of his criticism. For later scholastic thought had stressed the supposed role of formal logic not only in the presentation of argument but also in "invention" or "discovery," and this is the aspect of syllogistic theory of which Locke is most critical:

The Rules of Syllogism serve not to furnish the Mind with those intermediate Ideas, that may shew the connexion of remote ones. This way of reasoning discovers no new Proofs, but is the Art of marshalling, and ranging the old ones we have already.... A Man knows first, and then he is able to prove syllogistically. So that

Syllogism comes after Knowledge, and then a Man has little or no need of it. (Essay Concerning Human Understanding IV.xvii.6)

By contrast Locke does allow some value to syllogism as a means of presenting and showing the validity of arguments, and he is careful to express his considerable respect for Aristotle himself,

whom I look on as one of the greatest Men amongst the Antients ... And who in this very invention of Forms of Argumentation ... did great service against those, who were not ashamed to deny any thing. And I readily own, that all right reasoning may be reduced to his Forms of Syllogism.” (Essay IV.xvii.4)

But Locke sees syllogisms as far from ideal even for the purpose of presenting arguments, and suggests instead (Essay IV.xvii.4) that reasoning can better be presented as a chain of connected ideas with the “middle term” appearing explicitly as such (e.g. “man-animal-living”) rather than in syllogistic form (e.g. “animals are living; man is an animal; therefore man is living”) in which the premises force the ideas involved into an unnatural sequence (“animal-living-man-living”).

In place of a syllogistic understanding of reasoning, Locke sees it as founded on “a native Faculty to perceive the Coherence, or Incoherence of its Ideas” (Essay IV.xvii.4; see DEMONSTRATION), a Faculty whose objects, IDEAS, are one and all particular, so that the universality which is a fundamental characteristic of formal reasoning becomes merely “accidental” on Locke’s informal conception (Essay IV.xvii.8). Hence “logic” ceases to be a study of formal patterns of inference, and becomes instead the study of the cognitive faculties of the mind, a “facultative logic” (Buickerood 1985) whose aim is to yield principles for the correct employment of those faculties. Since ideas are the material with which they work, the study of ideas is at the heart of this discipline, and Locke’s Essay (together with his posthumous On the Conduct of the Understanding) thus itself appears to be a work of “logic” so conceived, which he also calls the “Doctrine of Signs”

or semiotics--this name being appropriate on the grounds that an idea is “a Sign or Representation of the thing [the Understanding] considers” (Essay I.xxi.4).

HUME very explicitly followed the Lockean interpretation of “logic”, and evidently saw the first book of his Treatise of Human Nature as a contribution to it:

The sole end of logic is to explain the principles and operations of our reasoning faculty, and the nature of our ideas... This treatise therefore of human nature seems intended for a system of the sciences. The author has finished what regards logic ...” (Abstract of a Treatise of Human Nature:646, quoting A Treatise of Human Nature: xv)

Hume likewise follows Descartes and Locke in viewing the traditional logic as barren, on the grounds that any “pretended syllogistical reasoning” which purports to extend our knowledge is in reality “nothing but a more imperfect definition” (An Enquiry Concerning Human Understanding: 163).

Given the scholastic authors with which they were acquainted, it is perhaps not surprising that the classical empiricists were so dismissive of formal logic. But after a century that has seen a rigorous and fertile discipline rise from the ashes, while the alternative informal search for natural principles of reasoning has little of substance to show, one can only conclude that their dismissal of formal logic as a worthwhile subject of study was certainly, if understandably, premature.

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