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FĀRĀBĪ II. LOGIC
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Most of Fārābī's extant writings deal with logic and the philosophy of language. Many of these writings take the form of commentaries on, or summaries of, the Aristotelian *Organon*, which, following the tradition of the Alexandrian commentators of late antiquity, included Porphyry's *Isagoge* as well as Aristotle's *Rhetoric* and *Poetics*. Fārābī also produced a number of independent treatises in the fields of logic and linguistic philosophy, such as the *Ketāb al-ḥorūf*, *Ketāb al-alfāzá al-mostaʿmala fi'l-manṭeq*, and parts of *Ketāb al-tanbīh ʿalā sabīl al-saʿāda* and *Eḥṣāʾ al-ʿolūm*. Throughout these works, Fārābī's perspective on the nature of logic remains constant: logic is defined principally as an instrumental science that safeguards the mind from error. It includes both syllogistic and non-syllogistic branches, and it culminates in the study of demonstrative science, which Fārābī often identifies as the method of philosophy itself.

The most important general theme in Fārābī's writings on logic may be the relationship between logic and grammar. Fārābī upholds the concept that logic is a form of universal grammar which provides the human mind with rules that it must follow in order to reason correctly in any language, whereas grammar, according to Fārābī, provides only those rules that have been established by convention for speakers of some particular natural language such as Arabic or Greek. A passage in his *Eḥṣāʾ al-ʿolūm* describes this

succinctly: “This art [of logic] is analogous to the art of grammar, in that the relation of the art of logic to the intellect and the intelligibles is like the relation of the art of grammar to language and expressions. That is, to every rule for expressions which the science of grammar provides us, there is a corresponding [rule] for intelligibles which the science of logic provides us” (ed. Amīn, p. 68).

In the *Ketāb al-ḥorūf*, Fārābī attempts to flesh out in more detail the exact nature of the relationship between philosophical logic and the ordinary grammar of Arabic. The work opens with an extended classification of Arabic particles and explores how their popular meanings in everyday usage are transformed into technical philosophical terms expressing ideas related to the ten Aristotelian predicaments or categories (ed. Mahdi, pp. 61-130). The second, better known, part of the text discusses the origins of language, the history of philosophy, and the relationship between philosophy and religion. It offers a broad picture of how human language in general originates and how it develops technical terms from popular usage (ibid., pp. 131-61). In the final part of the *Ketāb al-ḥorūf*, Fārābī returns to his consideration of the technical uses of philosophical terminology, this time through a classification of interrogative particles based upon their uses in different types of philosophical inquiry and their relationship to the four causes of Aristotelian philosophy (ibid., pp. 162-226).

Fārābī’s commentaries on the *Organon* itself are not simple summaries of the original texts, nor do any but the long commentary (*šarḥ*) on the *De interpretatione* attempt an exhaustive line-by-line exegesis of Aristotle’s work. Instead, Aristotle’s writings are used as a focus around which Fārābī can offer his own interpretations of Aristotelian logic and the school tradition that had grown about it, sometimes incorporating non-Aristotelian elements such as Stoic logic. In keeping with his interest in the relations between logic and grammar, Fārābī is conscious of the need to adapt Aristotelian logic to an Arabic context, a need he openly acknowledges in his discussion of the Prior Analytics, where he promises to “strive to express [Aristotelian syllogistic], as much as possible, by means of words familiar to people who use the Arabic language” (*Ketāb al-qiās al-ṣaġīr*, tr. Rescher, p. 49).

In the area of syllogistic theory, Fārābī upholds a broadly hierarchical conception of the syllogistic arts, which for him include rhetoric and poetics. He considers the purpose of the syllogism to be fulfilled primarily by the method of demonstration, as articulated by Aristotle in the *Posterior Analytics*.

As he states in *Eḥṣāʾ al-ʿolūm*, "logic seeks its principal intention only in this part, and the remainder of its parts have been invented only for its sake" (ed. Amīn, pp. 87-89). The non-demonstrative syllogistic arts are relegated, in this broad scheme, to the role of supplementary skills with the primary purpose of preventing philosophers from falling into error by using insecure methods.

Despite this broadly hierarchical view of the syllogistic arts, expressed in works like *Eḥṣāʾ al-ʿolūm*, Fārābī elsewhere shows a greater appreciation for other logical methods used in the pursuit of philosophy. A fine example of this recognition is found in his presentation of the role of dialectic in the opening of his epitome of Aristotle's *Topics*, the *Ketāb al-jadal,* where Fārābī identifies five important roles for dialectic within philosophy: (1) offering training in argumentative skills, (2) providing the student of philosophy with a first glimpse of the principles of the special demonstrative sciences, (3) alerting the philosopher to the innate self-evident principles of demonstration, (4) helping to develop the ability to communicate philosophical conclusions to non-philosophers, and (5) cultivating the tools by which sophistry can be combated (in ʿAjam and Faḵrī, III, pp. 29-38).

Fārābī's interpretation of the Aristotelian theory of demonstration is most completely articulated in *Ketāb al-borhān*, the part of his epitome of the *Organon* devoted to the *Posterior Analytics*. A parallel consideration of the epistemological foundations of the theory of demonstration is also provided in an independent treatise on the nature of certitude, the *Ketāb šarāʾeṭ al-yaqīn*. Both works offer extensive analyses of the logical and epistemic conditions that must be satisfied in order to attain true science or knowledge (*ʿelm* = Greek *epistēmē*). Fārābī begins the *Ketāb al-borhān* by distinguishing between the two basic cognitive acts that characterize human thought, namely, conceptualization (*taṣawwor*) and assent (*taṣdīq*). Conceptualization applies to any act of knowing by which we apprehend simple, discrete concepts. Its ultimate aim, when complete, is to allow us to grasp the essence of the object conceived so as to formulate its proper definition. Assent, by contrast, names an act of knowing which is by its very nature complex and involves a judgment of truth or falsehood. Perfect assent is the act that yields certitude of knowledge, and hence it is the aim of a demonstrative syllogism. Since Aristotle's *Posterior Analytics* considers both the proper way of discovering definitions and the construction of demonstrative syllogisms, the couplet of perfect conceptualization and perfect assent becomes the organizing theme for Fārābī's interpretation of the Aristotelian theory of science (*Ketāb al-*

borhān, in ʿAjam and Faḵrī, IV, pp. 19-22, 45).

In developing his views on the perfect act of assent that produces demonstrative certitude, Fārābī offers a detailed analysis cast in modal terms. Most significant is Fārābī's explicit articulation of the view that absolute certitude must be understood as a form of what contemporary philosophers call second-order knowledge. According to Fārābī, then, it is not sufficient for certain knowledge that the knower (the person possessing that knowledge) believe that the true statement to which assent is given cannot be otherwise: "And certitude is for us to believe, concerning the truth to which we have assented, that it is not possible at all for what we believe about this matter to be different from what we believe; and that, in addition to this we believe, concerning our belief, that another belief is not possible—to the extent that whenever some belief about the first belief is formed, it is impossible for it to be otherwise, and so on *ad infinitum*" (*Ketāb al-borhān*, in ʿAjam and Faḵrī, IV, p. 20). Thus, certitude for Fārābī requires both that we know some proposition to be true and that we know *that* we know it. Having defined certitude by these criteria, the way is open to Fārābī to develop a distinction between necessary certitude, which applies only to beliefs that can never be otherwise, and non-necessary certitude, which is certitude that holds "only at a particular time." Only necessary certitude requires an object of belief that is itself necessary and unchangeable: "Necessary certitude and necessary existence are convertible in entailment, for what is verified as necessarily certain is necessarily existent" (*Ketāb al-borhān*, in ʿAjam and Faḵrī, IV, p. 22; cf. *Ketāb šarāʾeṭ al-yaqīn*, in ibid., pp. 97-104). Necessary certitude, then, is the goal of scientific demonstration in its strictest sense; and in keeping with the Aristotelian view of strict demonstration, it can be applied only to a limited range of subjects which are in their very natures eternal and unchanging such as separate, immaterial substances and universals. But non-necessary certitude can apply to a much broader range of subjects and propositions, thereby allowing Fārābī to take into account the possibility of attaining some form of certitude about variable and contingent phenomena as well.

The overall spirit and inspiration of Fārābī's logical teachings thus remains thoroughly Aristotelian, but the details of his own presentations of basic Aristotelian logical themes introduce nuances and distinctions which are not explicit in Aristotle himself. In particular, Fārābī's desire to make Aristotelian logic compatible with expression in the Arabic language forced him to develop Aristotle's rather brief and scattered teachings on the relationship between

logic and language in new directions that would address the challenge created by the introduction of Aristotelian logical theory into a very different linguistic and cultural milieu from the one in which it originated.

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