

Concluding Remarks

The story of the problem of predication in the Graeco-Arabic tradition, posed in its specific form as the question of the semantic role of the copula, is also a story of the development of Arabic logic and its emancipation from its Greek roots. I suspect that its sequel up to at least the 13th/19th century would bring to light discussions that—given a discernably growing concern with semantic matters—may help to delineate the further development of the discipline and that would speak even more directly to issues in contemporary philosophy of language. This sequel can now be told. The details of the story followed in the present study already throw new light on the history of Aristotelian logic and they may, I imagine, be fruitfully compared with the medieval Latin developments that Nuchelmans and Geach have studied. The following is a concise summary of the arguments making up this story, with references to the texts cited. An index of those texts is provided at the end of the book.

Aristotle had a theory of inference and a theory of the sentence, but no theory of the copula. While syntactic homogeneity was presupposed by the *APr*, the *DI* presents APs as consisting of a NW and a SW, of which SWs are always predicative, thus presupposing syntactic heterogeneity (Texts 1–2). Aristotle did, however, say several things about the word “is” (Texts 3–6). For example, “is,” if said by itself, signifies nothing (Text 2); or when you say “Homer is a poet,” you are thereby not saying that Homer is (alive) (Text 6); or in APs “is” may be predicated as a third item—whence the distinction between *secundum adiacens* (“Socrates is”) and *tertium adiacens* (“Socrates is wise”) (Text 3).

The Greek commentators sensed the tension that Geach pointed out exists between the syntactic presuppositions of the *DI* and the *APr*. Already Alexander suggested that each text had a different perspective on the sentence (Text 7). But

as the commentators sought to explain Aristotle by Aristotle, they were forced to engage with the question of the role of the word “is” in predication. Alexander conceptualized the copula as a purely syntactic marker, to be distinguished from “being” when it occurs in the predicate place (Texts 8–12). However, as far as we can tell, none of the Greek commentators gave up heterogeneity in their commentaries on the *DI*. As for its syntactic role, by the end of late antiquity there was among *DI* commentators, broadly speaking, agreement on the following (Texts 13–16). APs dissolve into NWs and SWs. Any SW either has the structure (cop+NW) or else, if the SW is a grammatical verb, it can be paraphrased to have that structure, where the NW is a participial form to which “is” is prefixed.

With Stephanus at the latest, “to be” and other copulative verbs were called “hyarctic verbs” (Text 17). The later commentators also agreed that there are two fundamentally different types of predications (Texts 17–18). Aristotle had distinguished them in the *Cat*, and commentators saw the *DI* as referring to this distinction. A predicate is said synonymously *of* a subject, if the predicate is a universal picking out an essential feature of a particular. A predicate is said paronymously *in* a subject, if the predicate is an accident inhering in a substance. For example, in “Socrates is a man,” “is” signifies that Socrates is *an instance* of man (and thereby of animal, and ultimately of substance), whereas in “Socrates is wise” it signifies that Socrates *has* wisdom (which is a quality in the sense of the *Cat*, and thus an accident *in* a substance).

The Arabic translators of the *DI* were, for lack of a natural counterpart to the Greek “*esti*,” forced to create neologisms whenever they felt that this little word mattered for logical analysis (Texts 19–22). Particular historical circumstances shaped Fārābī’s philosophical project in such a way that he saw himself as constructing within Arabic a new language that would allow Arabs to do Aristotelian logic (and then philosophy) as a shortcut to the ultimate personal and political perfection for the good of Arabo-Muslim civilization. Fārābī thus forged an Arabic Aristotelian logic on the assumption that Greek was superior to Arabic as a language for logic: whatever resisted straightforward translation needed to be instituted as a technical term in the new Arabic logical lexicon.

Two of Fārābī’s contributions to logical theory were particularly influential. The first was that he insisted—against any grammatical intuitions from Arabic—that a copula (*rābiṭa*) must be used in categorical statements to signify the predicative relation between subject and predicate (Texts 27–31). The second was that he amalgamized the notion of paronymous predication of the Greek commentators with the theory of etymological word-derivation (*ishtiḳāq*) of the Arabic grammarians, introducing a new kind of heterogeneity (Texts 23–26). The idea that an artificial copula must be used to make up for a deficiency of the Arabic language was comprehensively challenged only four centuries later (Texts 63, 68, 70). The core doctrine of derived names (*al-asmā’ al-mushtaqqa*) remained an integral part of Arabic logical theory.

The details of Fārābī's contributions, however, even though they continued to be discussed by Avempace and Averroes in the Islamic West, were largely forgotten after Avicenna in the East. These details were nevertheless remarkable. Derived words, among which he counted verbs, are essentially predicables (in Geach's sense) that cannot occur in the subject place and are always predicated paronymously (Texts 24–25). Hence, derived words always signify an attribute, never a substance. There is clear heterogeneity. However, that did not mean for Fārābī that no copula was needed (Text 27). Since scientific statements need to be expressible as timeless and non-paronymous predicative statements, which was otherwise impossible on the doctrine of derived names, Fārābī proposed that the copula “*mawjūd*” be used. Syntactically, “*mawjūd*” bars homogeneity, because you cannot exchange what comes before it with what comes after it without marking that exchange by changing the respective case-endings (Text 28). That “*mawjūd*” is grammatically a derived name is for Fārābī a consequence of the contingent development of the Arabic language, and it is central to his philosophical project to set out the semantics of this philosophical misnomer. Semantically, he treats “*mawjūd*” as a particle. That means that it is neither a predicable nor a name but a syncategorematic marker of a relation (Texts 29–30). This relation is a secondary intelligible, namely, the instantiation of a predicative function. In Fregean terms, Fārābī's account of the role of “*mawjūd*” may be expressed by a function with two arguments whose value is the True, iff the object falls under the concept: $f(F(x))$.

Avicenna represents the cusp between the appropriation of the Greek tradition and the beginning of an emancipation from it. This is reflected by the difference in orientation between his early and late work. The *Shifā'* in a sense looks back to and is determined by Aristotle's method and the structure of the transmitted corpus. The *Easterners* and the *Ishārāt* prefigure the method and structure of later works on logic and philosophy. In the *Shifā'* (Texts 32–37) Avicenna still engaged with Fārābī's doctrine of derived names and scolds Aristotle for not having discussed auxiliaries (*adāt*), a third class of expressions roughly corresponding to Fārābī's particles (*hurūf*), which includes hyparctic verbs.

Not only does Avicenna here further develop the doctrine of derived names, he also ruminates on the question whether expressions like “*yamshī*” (a one-word expression in Arabic that however signifies “he walks”) should be understood as SWs or as APs. He concludes that such expressions are SWs and not APs, in contrast to *tamshī* (you walk) and *amshī* (I walk), which are APs and not SWs. The reason is that the former signify the nexus to an indeterminate subject, whereas the latter signify the nexus to a determinate subject (namely, the addressee or the speaker, respectively). This feature third-person inflected verbs share with derived names. The idea that these expressions signify the nexus to an indeterminate subject and that an AP requires that the nexus to a determinate subject is signified was important in the later tradition.

While clearly embracing a form of Fārābīan heterogeneity, Avicenna did not follow Fārābī in his theory of *mawjūd*. Avicenna merely insists that an AP consists of three parts—subject, predicate, and nexus—that in principle must be signified separately, but in the case of the nexus its signification may be left implicit (Text 34; 35–36 on the unity of the proposition). Accordingly, Avicenna distinguishes between APs that are complete ternary using the copula “*huwa*” (S+cop_{untensed}+P), incomplete ternary using a tensed copula like “*yūjad*” (S+cop_{tensed}+P), and binary because the copula is left implicit (S+P). This classification he takes to represent the Aristotelian *secundum/tertium adiacens* distinction (Text 37). All this detail notwithstanding, Avicenna’s late work (Texts 38–39), of which particularly the *Ishārāt* became the point of reference for the later tradition, makes no mention of any of it. He appears to not have thought it relevant for his new presentation of philosophy.

In a spirit critical of Avicenna, Rāzī advanced what I have called the Repetition Argument: If an IM includes the signification of a nexus, mentioning the copula “*huwa*” in sentences in which the predicate is an IM amounts to useless repetition (Texts 40–44). In such cases, Rāzī thinks the copula is redundant. In his *Mulakhkhas*, Rāzī presents APs in terms of hylomorphic compounds whose matter are the terms and whose form is the nexus signified by the copula. Contrary to the quantifier that is only part of the proposition when it is expressed in words but has no distinct expression in reality, the nexus and its modality do have such distinct expressions in reality (Texts 45–46).

Khūnajī dedicated an entire chapter of his *Kashf al-asrār* to the copula. In it he rejects Avicenna’s idea that first- and second-person inflected verbs are APs (Text 47) and criticizes Rāzī’s Repetition Argument. According to Khūnajī, Rāzī had failed to see that the signification of a nexus contained in the meaning of IMs is not the same as what the copula “*huwa*” signifies: while the former only signifies a nexus to an indeterminate subject, the latter signifies the nexus to a determinate subject, as Avicenna had said, and it is the latter that is needed to form an AP (Text 48–49). Like Rāzī, Khūnajī also remarks that the nexus of the predicate to the subject must be distinct from the nexus of the subject to the predicate, because the two may differ in modality. This issue was extensively discussed in the later tradition, particularly by Kātībī.

Abharī and Ṭūsī critically engaged with Rāzī, just as Rāzī had engaged critically with Avicenna. Both rejected the Repetition Argument along the same lines as Khūnajī (Texts 50–53). Ṭūsī distinguishes between the significations of the copulative and the pronominal “*huwa*.” The latter is contained implicitly by inflected verbs and IMs. Hence, they essentially signify a nexus to an indeterminate subject. However, they may also accidentally signify a nexus to a determinate subject in the context of a sentence, as the pronominal “*huwa*” implicitly contained in inflected verbs and IMs can be taken to refer back to the subject and thereby make the nexus to it determinate. “*Zayd yakūnu kātīb*” signifies the same proposition as

that expressed by “*Zayd huwa kātib*,” except that in the former a tense is specified (Text 51).

Kātibi wrote commentaries on both Rāzī and Khūnajī. In the commentary on Khūnajī’s *Kashf al-asrār* he presents a possible argument in support of the Repetition Argument. Along the lines of what Ṭūsī had proposed, he points out that if we take inflected verbs and IMs to contain the pronominal “*huwa*,” and that “*huwa*” makes the nexus to a subject determinate once it refers back to the subject in the context of a sentence, then there would be no need to state the copula again to make the nexus determinate (Text 54–55). This, however, seems not to have been Kātibi’s considered opinion, because in other works he clearly states that he rejects the Repetition Argument. In his commentary on Rāzī’s *Mulakkhkhaṣ* the bulk of his commentary discusses not the copula but the nexus signified by it. He criticizes Rāzī’s arguments for the claim that the nexus is a concept distinct from the concepts of subject and predicate (Texts 56–57), as well as the arguments for the claim that in a proposition there are two distinct nexus (as Khūnajī had pointed out), i.e., that of the predicate to the subject and that of the subject to the predicate. He argues that there are actually four distinct ways to consider a nexus between two terms (Text 58).

Urmawī wrote a non-confrontational commentary on the *Ishārāt*. But in his summa *Bayān al-ḥaqq* he shows detailed knowledge of the history of the discussions on the copula and weighs in on the question of whether there are two distinct nexus in a proposition and how they are to be distinguished, criticizing the Rāzīan argument (Text 59). A digest of these discussions is contained in the influential advanced handbook *Maṭāli‘ al-anwār*.

Samarqandī, who first included formal disputation theory in a major logical work, rejects the Repetition Argument along familiar lines (Text 60). With regard to the question of whether there are two nexus in a proposition, and which should be counted as part of the proposition, Samarqandī presents a new position. According to him, it is the occurrence of the affirmative nexus that is part of the proposition, a position that might have influenced Taḥṭānī, who recognized a fourth part of the proposition that he called the judgment-nexus (Text 61; for Taḥṭānī 65). Samarqandī also discusses the idea that in Arabic the role of the copula may be played by the vocalization that indicates the syntactic role of words in sentences. While he dismisses the idea, Taḥṭānī takes it more seriously (Text 63; for Taḥṭānī 68).

Ḥillī’s adjudicative commentary on the *Ishārāt*, while showing a clear allegiance with his teacher Ṭūsī in his assessment of Rāzī’s Repetition Argument, nevertheless provides a charitable and faithful presentation of Rāzī’s claims. Ḥillī closes with some general remarks on issues that had been discussed in connection with the copula, and suggests that in every proposition there are in fact four distinct nexus (not unlike Kātibi’s position in Text 58), a point that he had already made in his *al-Asrār al-khafiyya* (Text 64).

Taḥṭānī seems to have had major misgivings about traditional accounts of the copula. In his commentary on Urmawī's *Maḥāli* 'al-anwār he offers a comprehensive re-evaluation. Not only does he insist on distinguishing the judgment ("judgment-nexus") from the judgeable content (Text 65), he also denies that the word "*huwa*" does act as a copula at all (Texts 66–67). In fact, according to Taḥṭānī, we do not need a copula in any kind of proposition, for the signification of the nexus is contained in verbs and IMs, and even in nominal sentences, it is expressed by the vocalization. For Taḥṭānī, all these expressions—when they are in a form in which they can occur in the predicate-place, that is, when conjugated or declined appropriately—are unsaturated. It is by supplying the subject that they come to signify the nexus to a determinate subject. On this view, the Avicennan distinction between binary and ternary propositions becomes practically obsolete (Texts 68, 70–72). Taḥṭānī's intervention was perhaps the most forceful rejection yet of the traditional doctrines on the copula and the nexus. His great dialectical commentaries had an exceptionally far reach for centuries, shaping the formalized disputational praxis first properly introduced by Samarqandī in logical commentary writing.

Taḥṭānī's rejection of the Greek remnants in the theory of predication prompted Taftāzānī, who was baffled that anyone could have thought otherwise than Taḥṭānī, to research the history of the copula in the Arabic tradition by reading Fārābī (Text 76–77). Even though largely agreeing with Taḥṭānī's account of the problem of predication, Taftāzānī insisted that the nexus was a single entity (Text 73). Aligning his account of the nexus with the theories of predication formulated in *balāgha* works, he argued that the nexus was an asymmetric relation, just like the relation of *isnād* between the *musnad* and the *musnad ilayhi* (Text 74).

To explain why the converse of a proposition may have a different modality from the original proposition, he compares the nexus to the relation between the mind and an image in the mind. The fundamental relation is a property of the mind, namely that there is an image of, let's say, a red apple in it. Likewise, the fundamental nexus is a property of the predicate, namely that it is ascribable to subjects. One may say that it is a property of the image of a red apple that it is in the mind, or of a subject that a predicate may be ascribed to it, but that is merely a different perspective. Without a mind, there is no image, and without a predicate, there is no nexus and hence no subject. An example he gives is a rejection of the interchangeability thesis: "Every old man was young" does not convert to "Some young man was old" but rather to "Something that was young is old," because the nexus is precisely not what is signified by "was." Rather, what is signified by "was" is part of the predicate. Like Taḥṭānī, Taftāzānī thinks that in Arabic, the nexus is signified by case-markers. But in contrast to Taḥṭānī, he classifies propositions in which both or one term is indeclinable as binary and incomplete ternary propositions, respectively. In such propositions, the case-markers signifying the nexus are not, or not fully, realized (Text 75).

While the influence of *balāgha* was already discernible in Taftāzānī's approach to the problem of predication, the influence of 'ilm al-waḍ' becomes fully apparent with Jurjānī's account of the problem of predication in his *Treatise Verifying the Meaning of the Particle* (Texts 79–85). In his commentary on Kātībī's *Shamsiyya* (Text 78), Jurjānī generally agrees with Taftāzānī on the main points. He thinks that the copula may be employed to signify both the predicative nexus and the judgment-nexus, and that the nexus is a single entity. However, his argument for why the nexus is simple is distinct.

What he only summarily expresses in the commentary on the *Shamsiyya* is fully laid out in his *Treatise Verifying the Meaning of the Particle*. Framed in the theory of reference provided by 'ilm al-waḍ', Jurjānī compares the nexus to a mirror (Text 79). Like a mirror that you can look into to see an image, or look at as an object to inspect, for example, the cleanliness of its surface, the nexus can be looked at to see a state of affairs or it can be looked at as an object in itself. This is similar to particles in that particles signify relations (Text 80). According to the semantic theory for particles developed in 'ilm al-waḍ', they signify a general relation, like the relation of "beginning," and all the particular instances of relations falling under the general idea. The reference of particles is fixed by the *relata*, for example, "the journey from here to Baghdād." Likewise, the general idea of predication is expressed by the copula, and its reference is fixed once subject and predicate are supplied. Jurjānī extends the semantic theories of 'ilm al-waḍ' to his discussion of the nexus in connection with verbs (Text 81–82). Verbs include the signification of the nexus and hence need a subject to be supplied to determine the predicative relation. Jurjānī's account is remarkable for its novelty, economy, and explanatory power. But it raised new problems, some of which Jurjānī addressed (Text 83–85).

Dawānī would not accept most of the new approaches to the problem of predication. In his commentary on Taftāzānī's *Tahdhīb*, he not only denies that a proposition has four parts, but also rejects the idea that in Arabic the role of the copula is played by case-markers (Text 87–88). His criticism is however not reactionary. He compares the proposition to a painting by a painter who actually wants to depict something (as opposed to an imaginary *sujet*) (Text 86). The nexus between subject and predicate is just like the intention of the painter: it may depict something, or it may just propose something. Dawānī is aware of Taftāzānī's comments on Kātībī's *Shamsiyya* (Text 87), but he himself believes that the disagreement about what kind of expression "*huwa*" is boils down to a terminological misunderstanding between the logicians and the grammarians (Texts 87–88). Citing the grammarians, he argues that the copula is neither a noun nor a partitive pronoun, but a particle performing the role of the copula. Its usage established by logicians has nothing to do with the grammarians' descriptions of natural language.

A glance at a short passage from Mubīn's commentary on Bihārī's *Sullam* (Text 89) shows that the discussions on the problem of predication continued into the

13th/19th century and beyond. In *Bihārī* and *Mubīn* the problem of predication is closely linked with the discussion on the nature of judgment. It remains to explore more systematically the rich tradition of philosophy of language contained in the countless commentaries that were written between the 10th/16th and 14th/20th century in the Arabic world.