

The Great Dialectic Commentaries

Until recently, the 8th/14th century had been described by scholars of Islamic intellectual history as the beginning of a period of decline and scholastic ossification in the rational sciences, especially in logic. This assessment was mainly supported by the largely armchair assumption that after the 7th/13th century hardly any independent works were written in philosophy, especially in logic, and that the works listed in bibliographies are, merely by the fact that they are commentaries, necessarily pedantic and unoriginal. By looking at these works, many of which first have to be edited, and by analyzing their contents, recent scholarship has begun to show that original research was being carried out within the format of the commentary.

The post-Marāgha generation of scholars contributed to both a multiplication and an intensification of original research in logic. As we saw in the last chapter, the lively and critical engagement with the Avicennan-Rāzian heritage by scholars connected to the Marāgha observatory led to a number of logical innovations that became enshrined in the new logic handbooks. The next generation of scholars, both Sunnī and Shī‘ī, shaped a new commentatorial praxis that was intimately linked to the formalization of dialectics (*ādāb al-baḥṭh*) advanced by Shams al-Dīn al-Samarqandī.

In addition to the new genre of the *Muḥākamāt*—adjudicative commentaries on earlier *Ishārāt* commentaries—scholars like al-‘Allāma al-Ḥillī and Qutb al-Dīn al-Rāzī wrote monumental commentaries on the new logic handbooks. Conceived in a critical spirit influenced by disputation theory, they set the standard for later generations—up to the eve of modernity—against which scholars were to probe their arguments and further their original research in logic. With regard to discussions on the problem of predication, this development helped scholars to formulate

a fresh set of problems and insights and, with Quṭb al-Dīn, led to the first and most forceful rejection yet of the Aristotelian-Avicennan doctrine of the copula.

DIALECTICS AND LOGICAL RESEARCH IN COMMENTARIES: SHAMS AL-DĪN AL-SAMARQANDĪ

A significant development in 7th/13th- and 8th/14th-century Islamic intellectual history was the formalization of dialectics. Emerging from the traditions of juridical *eristics* (*‘ilm al-khilāf*) and the dialectics of Aristotle’s *Topics* (*jadāl*), the new formalized theory of disputation (*ādāb al-baḥth/munāẓara*) was based on the principles of propositional logic set out by the new logicians.¹ The process of an increasing cross-pollination between the developing *ādāb al-baḥth* and the form of argumentation within logical commentaries was already underway at the turn of the 7th/13th century when Abharī studied with al-‘Amidī. It was more clearly in evidence in the commentaries of Abharī’s student Kātibī, who criticized arguments by using the dialectical method, presenting in a formulaic way possible objections and responses with expressions like “there is room for discussion here (*fihī naẓr*),” “we do not concede x (*lā nusallim*),” “to the one saying x, we say y (*li-qā’il . . .*).”²

While it is beyond the scope of this chapter to thoroughly study this development, by briefly introducing a figure—arguably the single most important author for the formalization of *ādāb al-baḥth*—as a paradigmatic example of an esteemed logician who formalized and first integrated the new science into logic, the significant interconnections between the development of *ādāb al-baḥth* and logic proper may at least be brought to attention.

This scholar, named Shams al-Dīn Muḥammad b. Ashraf al-Ḥusaynī al-Samarqandī, was born sometime in the mid-7th/13th century and likely hailed from Samarqand.³ Even though he wrote several highly influential works, he hardly features in the near-contemporary biographical sources.⁴ It seems that he studied with the expert on *khilāf* and *jadāl* at the time, Burhān al-Dīn al-Nasafī (d. 687/1288), a Central Asian-born scholar who taught in Baghdād (al-‘Allāma al-Ḥillī and Ibn al-Fuwaṭī were among his students), and on whose *al-Fuṣūl al-burhāniyya* (The Burhānian Chapters) he wrote a commentary, completed in 690/1291 in Mardin.⁵ He dedicated his extensive auto-commentary on his logical summa *Qisṭās al-afkār* (The Balance of Thoughts) to ‘Imād al-Dīn Khidr b. Ibrāhīm al-Mu’mini an Īlkhānid grandee in Tabriz. Later he appears to have moved to Khujand in Central Asia. The preferable date of his death is now 722/1322, based on a correction in an early manuscript.⁶

We do not know much more about his life, but both his *al-Ṣaḥā’if al-ilāhiyya* (Theological Papers; completed in 680/1282–1283) and his auto-commentary thereon, *al-Ma’ārif fī al-ṣaḥā’if* (The Knowledge [Contained] in the Papers), were important works of Maturidī theology.⁷ He was also a skilled mathematician and astronomer.⁸ In logic, his most important works include the substantial logical

summa *Qisṭās al-afkār* (completed 683/1283–1284) and a lengthy auto-commentary on it, showing some independent thinking on the analysis of the proposition (completed 692/1293–1294).⁹ He also wrote an *Ishārāt* commentary titled *Bishārāt al-Ishārāt* (The Good Tidings of the Pointers; completed 688/1289), which appears to have influenced Quṭb al-Dīn al-Rāzī.¹⁰

However, Samarqandī was primarily known to posterity for his foundational treatise on disputation theory, the eponymous *al-Risāla al-Samarqandiyya fī ādāb al-baḥṭh* (The Samarqandian Treatise on Disputation Theory).¹¹ In it, he lays out the formal rules for an orderly debate and the kinds of objections one may raise against one's opponent.¹² While Samarqandī wrote other works on dialectics, it is important to note that he considered this newly codified science a proper part of logic. He dedicated the entire twelfth section of his *Qisṭās* to it, making it the first work on logic to include the new science.¹³

The influence of *ādāb al-baḥṭh* on the style of commentary writing became more pronounced in the course of the century, especially in the commentaries of Quṭb al-Dīn al-Rāzī. In what follows we shall first survey Samarqandī's treatment of the Repetition Argument in his *Qisṭās* from 683/1283–1284, his *Ishārāt* commentary from 688/1289, and the *Sharḥ al-Qisṭās* from 692/1293–1294, and then provide brief reflections on his method and his contribution, which will serve as the basis for a tentative argument about his influence on Quṭb al-Dīn al-Rāzī, discussed at the end of this chapter.

Samarqandī on Copula and Nexus: Responses to Rāzī

Samarqandī was neither an orthodox nor a revisionist Avicennan. But on the major issues regarding the analysis of propositions discussed in the tradition, he critically engaged with Rāzī and proposed solutions that he either eclectically pieced together from both revisionist and orthodox logicians, or else that he seems to have come up with himself. In the *Qisṭās*, Samarqandī begins the part on the Acquisition of Assent by compiling the accounts of the parts of propositions by Avicenna, Rāzī, and Khūnajī. Often quoting his predecessors verbatim, he first offers a comprehensive account of the uncontroversial parts of the tradition on the analysis of propositions, and then tackles controversial issues. First, he discusses the Repetition Argument:

TEXT 60: SHAMS AL-DĪN AL-SAMARQANDĪ, *QISṬĀS AL-AFKĀR* (PEHLIVAN 2010), 63.5–12 (= PEHLIVAN 2014, 175.18–177.8)

The Imām [al-Rāzī] claimed that the proposition whose predicate is a statement-word or derived name is binary on the level of expression, but ternary by nature, because the nexus is signified by containment. And that mentioning it causes repetition.

The response to this is the following: We have explained that these [i.e., statement-words or derived names in the predicate-place] do not signify the determination of the subject and that, therefore, a copula is needed. For the pronoun contained in the predicate is the agent-pronoun and its position is at the end of the predicate. This

[pronoun] is a name—as agreed by grammarians—and its signification of the nexus to some subject is different from [that of] the copula. They disagree about whether [the copula] is a name and about its place in the middle, but in the Qurʾān there is an explicit mention of the copula together with the predicate implicitly containing the [signification of] the nexus: “You are the All-Observer” [Q5:117].

This inquiry is in reality outside the scope of the logician, since it is not on him [to figure this out], except insofar as it is necessary that that which signifies a determinate subject be mentioned. And if derived names in Arabic are such, then it is not necessary to mention the copula—and if they are not, it is necessary.

Samarqandī here clearly takes Khūnajī’s line of response. While it is correct to say that a part of the verb or derived name signifies an indeterminate subject, this does not make mentioning the copula obsolete. For what the copula contributes to the meaning of the sentence is precisely to determine the subject that verbs and derived names signify only implicitly and indeterminately. Like Khūnajī, Samarqandī cites grammarians in support, and like Khūnajī, he dismisses the issue—beyond the point that in propositions a determinate subject must be indicated—as being irrelevant to logic.

He quotes the same Qurʾānic example as Khūnajī, giving however some valuable explanation as to the point that he takes it to illustrate. The example is “You are the All-Observer [Q5,117: *Kunta anta al-raḡība*],” where, according to Samarqandī, the predicate *al-raḡība* is a derived name (and declined [*manṣūb*], as Khūnajī had pointed out) and thus implicitly signifies an indeterminate subject, while the copula—“*anta*” (you) in this case—is still explicitly mentioned. If Rāzī were to insist that this was a meaningless repetition, he would have to explain this verse with regard to the doctrine of the perfection and inimitability of the Qurʾān.

The next controversial issue Samarqandī picks up also contains a criticism of Rāzī. As Khūnajī had already pointed out, a nexus between subject and predicate is not symmetrical, for, depending on a given subject and predicate, the modal quality of the nexus in the direction from predicate to subject may be different from that in the direction from subject to predicate. Samarqandī considers different positions before he gives his own opinion.

TEXT 61: SHAMS AL-DĪN AL-SAMARQANDĪ, *QIṢṬĀS AL-AFKĀR* (PEHLIVAN 2010), 64.4–65.4 (= PEHLIVAN 2014, 177.15–179.15)

The Imām [al-Rāzī] seeks to prove the distinction [between the two distinct nexus] by the difference of modality between the default [proposition] and its converse.

There is an issue here. For that only follows if the nexus of the predicate is also by predicate-hood in the converse, but this is not the case; for it is then by subject-hood.

Their views waver on the question of whether it is subject-hood or predicate-hood that is a part of the proposition. The Imām [al-Rāzī] in the *Mulakhkhaṣ* holds that it is subject-hood, and that predicate-hood is necessarily external [to the proposition]. In the *Sharḥ al-Ishārāt* he said: The copula expresses the nexus of the predicate to the subject; therefore, its quality is the modality of the proposition. These two [claims]

are contradictory. Some scholars of our time agree with the first [claim], and perhaps this is based on the fact that when the subject-hood is necessary, then the proposition is necessary, even if the predicate-hood is not necessary, like with the general necessity [proposition]; and when [the subject-hood] is not necessary, the proposition is [also] not necessary, even if the predicate-hood is necessary, like with the separable property. This is the account of what they are saying on this issue.

Rāzī's argument had been that since you cannot convert "Humans [are] writers" to "Writers [are] humans" without thereby changing the modal quality of the nexus, there must be two distinct nexus, one in the direction from predicate to subject, and one in the direction from subject to predicate. Samarqandī now points out that Rāzī's argument does not show that there are two nexus, because once converted the relation between "writer" and "human" does not change: it is still necessary that a writer is a human and contingent that a human be a writer.¹⁴ It is still the case that human is the subject, in the sense of underlying thing, in which writing, in the sense of an attribute, inheres. Hence, Samarqandī's reply to the controversy is that "being-a-subject" and "being-a-predicate" are conceptions dependent on something prior: what is relevant to, and in fact part of, the proposition is the occurring or not of the nexus affirmed by the judgment.

What changes, then, in conversion is the nexus affirmed by the judgment. The modality of the resulting proposition is dependent on that, not on its subject- or predicate-nexus. The distinction between a nexus that is affirmed by a judgment and the nexus between the meaning of subject and predicate appears—even though presented as an Avicennan position—novel in the tradition. It should be a central point for Qutb al-Dīn al-Rāzī's revised account of the analysis of the proposition—even though Samarqandī makes no mention of this idea in his comment on the lemma in question in the *Bishārāt*:¹⁵

TEXT 62: SHAMS AL-DĪN AL-SAMARQANDĪ, *BISHĀRĀT AL-ISHĀRĀT*
(MS ISTANBUL: CARULLAH 1308), FOLS. 28V1–28V9

I say: When he clarified that when the negational particle is a part of the predicate, the proposition is metathetic, and otherwise positive, he needed to explain by what [criterion] one knows the difference between the negational particle that is part of the predicate and that which is not.

So we say: The quiddity of a categorical [proposition] is composed of three parts, the subject, the predicate, and the nexus between the two, by means of which subject and predicate are connected. And just as it is only right for the subject and the predicate to be signified by an utterance, it is only right that the nexus also be signified by an utterance, so that the utterance corresponds to the meaning. This utterance [signifying the nexus] is called "copula." The copula may be left out in some languages, like in Arabic, as it is correct to say "Zayd [is] a writer." In this case the proposition is called binary; and if the copula is mentioned, as when it is said "Zayd, he is a writer," it is called ternary. In some languages leaving it out is not permitted, as for example in Persian, for one cannot leave out "is" (*hast*) from the sentence "Zayd is a writer."

The copula belongs to the auxiliaries, because it signifies a nexus and a nexus is not independent in itself. It may be found in the form of a name as one of the pronouns like “he” or “she” etc., in which case we call it a non-temporal copula, or else it may be found in the form of one of the hyparctic statement-words, i.e., the [semantically] defective verbs like “to be” or “exist,” in which case we call it a temporal copula, because of its signification of time.

Like Urmawī’s, Samarqandī’s *Ishārāt* commentary appears here purely expository. The main interest of the passage lies in the intertextual connections between Samarqandī’s works and that of Quṭb al-Dīn al-Rāzī. The wording here is very close to the expository paragraphs in Samarqandī’s *Qisṭās* and its commentary, as well as to the *Ishārāt* commentary by Quṭb al-Dīn.¹⁶

In the commentary on the *Qisṭās*, Samarqandī does not add much to the discussion of Rāzī’s Repetition Argument, except that he explains in greater detail why the Qur’ānic verse “You are the All-Observer (*kunta anta al-raqīb*)” serves as a proof for the falsity of the Repetition Argument. According to Samarqandī, the Qur’ānic example shows that “*anta*” is the copula that does however not cause repetition, for if it were not, it would have to be the grammatical subject (*mubtadā*) and “*al-raqīb*” its grammatical predicate (*khavar*), or if “*al-raqīb*” is lifted from the sentence, it would be the predicate of “*kunta*” (*khavar kāna*). Neither option is plausible for Samarqandī, nor is the idea that the pronouns (“*huwa*,” “*anta*”) have no signification but only function to separate subject and predicate (*faṣl wa ‘imād*). But in any case, this is for grammarians to sort out. As he said in the *Qisṭās*, adopting Khūnajī’s phrasing, all that matters for the logician is to know that a nexus to a determinate subject must be signified.

Just before, however, he sets out his thoughts about the difference in the use of the copula between Persian and Arabic:

TEXT 63: SHAMS AL-DĪN AL-SAMARQANDĪ, *SHARḤ AL-QISṬĀS* (MS BERLIN: STAATSBIBLIOTHEK LANDBERG 1035), FOLS. 42V31–43R4 (= MS YALE: BEINECKE ARABIC 11, FOLS. 30V13–19)

If you were to say: Why is it not possible that the copulae in Arabic are just the signs of declension, be it short vowels or letters, and that this [just] is the truth of it, for they signify the compound by dint of the conventions (*wad’*) of the Arabic language. The proof for this is that when simple expressions are mentioned and then there is a pause before another [is mentioned], no connection and no compound obtain; and when they signify the compound by convention, then they are copulae. In this case there is no difference between Arabic and Persian with regard to the necessity of mentioning the copula.

Then I say: We know by necessity that the statement-words we mentioned are copulae connecting the predicate to the subject on account of the language and [its] convention. In this case it is not correct to say that the signs of declension are a copula by convention. For if it were like that, then it would not be possible to mention

along with them the copulae that we have mentioned—yet it is well agreed that it is possible. As for the antecedent: because if they are mentioned, they are mentioned either in order to connect, or in order to affirm the connection that the signs of declension signify, or else in order to distinguish the attribute from the predicate by agreement. But there is no way to any of those. As for the first: it is impossible to make obtain what is already obtaining; as for the second: the affirmation cannot precede the thing affirmed; as for the third: there are cases in which there is no need to mark the distinction, like in “*Zayd huwa kātib*.” Hence, it is not allowed to treat as a copula the [short vowel] *kasra* at the end of the predicate in Persian. The signs of declension have only been set down by convention for the meanings of simple expressions that do not signify the compound of their own account in terms of being a subject, being an object, and being a genitive-construct, as the grammarians explain. Hence it is not prohibited to mention them, as they are set down by convention for the judgment-nexus, its occurrence or lack thereof.

We may note that Samarqandī here raises an objection that—whether hypothetical or not—has not been discussed in the authors surveyed so far. The idea is that, given the intuition from Arabic grammar that found its expression in Rāzī’s Repetition Argument, namely that the artificial copula introduced by the earlier logicians is not at all needed to properly express a proposition, one might argue like this: granted that the nexus is a concept distinct from those of subject and predicate and thus needs to be expressed somehow on the level of language, why should that task not be taken care of by the grammatical inflections that simple expressions take in the context of a sentence? Quṭb al-Dīn will make use of it, as we will see at the end of the chapter.

*Note on Samarqandī’s Method: Logic and Dialectics (ādāb al-baḥṭh),
Auto-Commentaries, and Eclecticism in the Qisṭās al-afkār*

From this short survey of passages dealing with the analysis of propositions and the copula, we may tentatively note three important points. First, as we have seen in Kātibī’s commentaries, Samarqandī’s commentaries make extensive use of locutions and argumentative strategies from the new *ādāb al-baḥṭh*. While the *Ishārāt* commentary may be described as primarily expository or exegetical in approach, in both the *Qisṭās* and the auto-commentary on it the style of writing is essentially dialectical, using devices like “A said *x*, B said *y*, but the truth is *z*,” “if you were to say *x* . . . I say *y*,” etc. Objections raised may be objections made by scholars in writing or orally, or hypothetical objections that the author himself anticipates. Both are treated in the same way following the formalized protocol of *ādāb al-baḥṭh*.

This leads to the second point: It is important to note that with Samarqandī’s dialectical method, the genre of the auto-commentary appears to be particularly conducive to what we should describe as original work or research. The claim that commentaries were pedantic and unoriginal rested on the idea that their authors

merely reproduce, perhaps in a more accessible fashion, the material presented by other authors. While one might find a reason to write such a commentary on one's own work, the commentary on the *Qisṭās* seems to be more concerned with deepening questions than with making them more accessible.

The third point, then, is that since both independent works and commentaries routinely engage with the positions of predecessors, even including an author's own earlier work (there is little difference between the independent *Qisṭās* and its commentary in that the commentary would contain fewer original ideas—rather the contrary), we should see the eclectic presentations of logical issues together with this deepening of questions as the main thrust of at least some of the writings of most logicians, including commentaries, from that period.

IBN AL-MUṬAHHAR AL-ḤILLĪ: COMMENTING ON RĀZĪ, ṬŪSĪ, AND KĀTIBĪ

Ḥasan b. Yūsuf Ibn al-Muṭahhar al-Ḥillī, known by the honorific al-ʿAllāma al-Ḥillī, was a contemporary of Samarqandī, born in 648/1250 to an Imāmī Shīʿī family in Ḥilla, Iraq.¹⁷ His father belonged to the scholarly and political elite of Ḥilla and appears to have been, together with his maternal uncle Najm al-Dīn al-Ḥillī, who was the “*muḥaqqiq al-awwal*” (foremost scholar) of the town, the most important teacher in his youth.¹⁸ After studying the works of the Shīʿī Muʿtazilites with various renowned teachers, he read with Ṭūsī and Kātibī—likely at Marāgha¹⁹—the philosophical works of Avicenna and Rāzī, and, especially, with Kātibī the logical works of Khūnajī, of Abharī, and of Ṭūsī and Kātibī themselves. Ḥillī spent a later period of his life at the court of the Ilkhānid ruler of Persia Öljaitu (*reg.* 704/1304–716/1316) and played some role in the ruler's conversion to the Shīʿī Islam.²⁰ He died in his hometown in 726–727/1325.

Ḥillī was one of the most influential Shīʿī scholar-theologians of the medieval period. His works, especially on theology and jurisprudence, continued to be revered by Shīʿī readers until modern times.²¹ His orientation seems to have tended more toward the orthodox Avicennism of his teacher Ṭūsī than toward the revisionist Avicennism of his teacher Kātibī.²² He wrote commentaries on the key logical works of both his teachers. On Kātibī's *Shamsiyya*, he wrote *al-Qawāʿid al-jaliyya fī sharḥ al-Risāla al-Shamsiyya* (The Clear Principles in Commenting upon the Epistle for Shams al-Dīn), completed likely before 676/1277.²³ His most widely read logical work is *al-Jawhar al-naḍīd fī sharḥ mantiq al-Tajrīd* (The Tiered Jewel in Commenting upon the Logic of the Extracted Points) on Ṭūsī's *Tajrīd al-mantiq*, completed after 680/1281.

Further, he wrote an *Ishārāt* commentary, titled *Muḥākamāt* (Adjudications), completed shortly before 720/1320 and still unedited, in which he critically compared the commentaries of Rāzī, Ṭūsī, and Najm al-Dīn al-Nakhjuwānī (7th/13th century). Other than in his unfinished commentary on Avicenna's *Shifāʾ*, he extensively treats logic in his tripartite summae of philosophy, notably in the Logic

of *al-Asrār al-khafiyya fī l-‘ulūm al-‘aqliyya* (The Hidden Secrets in the Rational Sciences), completed around 679/1280, and in *Marāṣid al-tadqīq wa-maqaṣid al-tahqīq* (Observation Points of Precision and Destinations of Verification), of which only the Logic part survives.²⁴

*Between Revisionist and Orthodox Logicians: Commenting
on His Teachers Kātibī and Ṭūsī*

Ḥilli has been considered a foremost theologian and a formative legal theoretician, but a largely unoriginal philosopher.²⁵ While it is fair to say that the virtues of his commentaries on logical works lie in the clear exposition of the positions of their authors rather than in original contributions by Ḥilli himself, this does however not mean that Ḥilli had no contributions to make to logical theory. Even though his two early logical commentaries are in the main expository teaching texts, we see Ḥilli, who must have been in his twenties or early thirties when he wrote them, embracing the teachings and general approach to the Avicennan tradition of his orthodox teacher Ṭūsī, while criticizing the positions of his revisionist teacher Kātibī.²⁶

In the *Qawā‘id*, which Ḥilli says he wrote at the request of logicians who found the *Shamsiyya* difficult to understand—a typical *topos* to introduce expository commentaries—he at the end refers his readers to the *Asrār* for his own positions.²⁷ The chapter “Parts and Classifications of Propositions” does not raise problematic issues, but Ḥilli there does mention Rāzī’s Repetition Argument, simply dismissing it by saying “Fakhr al-Dīn claimed that [predicates that are statement-words or derived names] are connected by themselves to the subject of a proposition. But this is false.”²⁸

In the *Jawhar*, Ḥilli is already, as Street has remarked, “less full-throated in his support for Ṭūsī’s positions” than in his earlier works, and on occasion reverts to a Rāzian or Khūnajīan position on specific issues.²⁹ In the chapter on the Parts of the Proposition, Ḥilli does not mention the Repetition Argument, but explains that propositions consist of two primary parts, that about which judgement is passed and that by which judgment is passed. A proposition is true, iff that of which the former is true, of that the latter is also true, i.e., if “man” is true of x, and “writer” is true of x, then “man is a writer” is a true proposition. The copula is a formal part (*juz’ šūrī*) that may or may not be mentioned in Arabic (but must be mentioned in Persian).³⁰

While in these early commentaries Ḥilli’s inclination toward the orthodox strand of Avicennism is discernible, and there may already have been a development toward a more balanced approach to the legacy of both his logic teachers, they were certainly not the place to discuss controversial logical issues in detail. The much later *Muḥākamāt* (completed around 720/1320) did provide space for that.

The Adjudications between Rāzī’s and Ṭūsī’s Ishārāt Commentaries

In the *Muḥākamāt*, commenting on the lemma that Rāzī had used to advance his challenge, Ḥilli first presents an account of the proposition and its parts in terms of a hylomorphic compound, just as Rāzī had.³¹ According to Ḥilli, a proposition—just like any other compound—in reality (*fī l-ḥaqīqa*) needs both formal

and material parts. In a simple categorical proposition, there are thus exactly two material parts, namely, what is signified by subject and predicate, respectively, and exactly one formal part, namely, the combination of the two material parts (*ijtimāʿ*) signified by the copula (fol. 96v8–11).

That the meaning of the copula, i.e., the combination of the two material parts, is a concept additional to the concepts signified by subject and predicate is shown by the fact, and here Ḥillī again follows Rāzī, that the latter two can very well be conceived of without conceiving of the former. This formal part is strictly necessary for there to be a proposition. While the copula is a mental concept (*amr ʿaqlī*, fol. 96v15), for there to be correspondence in number between utterances and concepts, it should be mentioned in sentences expressing propositions (fol. 96v11–16).

However, in his exegetical presentation of the Avicennan lemma, Ḥillī says that languages differ as to the necessity or not of expressing the copula, so that while in Persian it indiscriminately has to be mentioned, in Arabic it is not needed as long as the predicate is a verb or a derived name. Hence, one should say “Zayd, he [is a] writer” instead of merely “Zayd [is a] writer.” This was the point Rāzī had used to mount his criticism. Consequently, the way Ḥillī classifies propositions into binary and ternary differs slightly from his predecessors. On his account, a proposition is called binary either if a proposition is such that its predicate is a verb or a derived name, so that it naturally does not have a copula, or else if the copula is simply omitted. Here, he does not distinguish between complete and incomplete ternary propositions (fols. 96v16–97r11).

After this lengthy exposition, Ḥillī presents the challenge that Rāzī had posed in his own commentary together with Tūsī’s rejection of it. He quotes Rāzī verbatim, then charitably presents his objection: What is understood from verbs and derived names contains, in addition to the action or property they primarily signify, a concept distinct from that. This is the nexus between this primary signification and a subject in which it inheres. Hence, if in such cases a copula is mentioned, there would be useless repetition. Ḥillī also faithfully reproduces Rāzī’s anticipated objection (*iʿtaraḍa*, fol. 97v1): One might say that since the concept of “man” and the concept of “writer” are distinct and the concept of the linkage (*intisāb*, fol. 97v3) of one to the other is a concept additional (*zāʿid*, fol. 97v3) to these two, then necessarily there must be an additional expression signifying this concept (fols. 97r11–97v3).

But then, as Ḥillī reproduces Rāzī’s response (*ajāba*, fol. 97v4), even if the concepts of the nexus and of the predicate are concepts distinct from the concept of the subject, this does not entail that the nexus needs a separate expression to signify it. For the concept of the predicate is such that it connects to the subject by its own essence. The nexus is part of the predicate and, thus, that which signifies the predicate includes the signification of the nexus. Ḥillī quotes (again verbatim) the Most Eminent of the Verifiers (i.e., Tūsī), objecting that the verb only connects by itself to its agent-noun when nothing comes before it, and the agent-noun never

precedes the verb in Arabic, so that it never by itself connects to a name preceding it. On Rāzī's argument, if we change "Zayd [is a] writer" (*Zayd kātib*) to "Writes Zayd"³² (*Zayd yaktub*), the predicate is a verb and even in this case we would have to change to "Zayd, he writes" (*Zayd huwa yaktub*), because when the verb follows the agent-noun it does precisely not by itself connect to it. So there is a difference between what connects the verb to the agent-noun and what connects the grammatical predicate to the grammatical subject (fol. 97v4–14).

Hillī's judgment (*wa l-ḥaqq*, fol. 97v15) falls squarely on the side of Ṭūsī. He justifies his adjudication by saying that the copula implicit in verbs and statement words does not signify the connection to a specific subject, but just to any subject, and that what is needed in a proposition is something that signifies the connection to a determinate subject. For him, the implicit pronouns are names, and the copula an auxiliary. Hillī thus advocates the position that the copula is needed, and goes on to explain that the correct place for it in the sentence is in the middle between subject and predicate expressions—even though in Persian it usually comes at the end. Then, Hillī adds some more general remarks of his own on the analysis of the proposition. Every proposition, says Hillī, is in fact quaternary, because any nexus has in itself a determined modal quality, even if a modality is explicitly expressed in the proposition. Further, as has been pointed out since Khūnājī, the nexus of the subject to the predicate is not the same as the nexus of the predicate to the subject, for their modal qualities may differ (fols. 97v5–98r13).

In contrast to Samarqandī, Hillī here formulates a new doctrine according to which there are not two distinct nexus in a proposition, but in fact four. Samarqandī had rejected the idea that any of the two nexus are part of the proposition in favor of the idea that what is in fact part of the proposition is the judgment-nexus (Text 63). Hillī claims that since every proposition contains a subject and a predicate, and each of them has a nexus to the other either as being-a-subject or as being-a-predicate, there is a total of four distinct nexus in a proposition (and its converse). He might have gotten this idea from Kātibī, who did not explicitly state this position, but did distinguish four ways in which one can think of a nexus between two terms (fols. 98r13–98v3).

The Logic of the Summae

At the end of the *Qawā'id*, Hillī had referred the reader to his *Asrār* for fuller treatment of his criticisms of Kātibī.³³ In this early work, Hillī introduces the distinction between hypothetical and categorical propositions and then lays out his view on the parts of the proposition.³⁴ A categorical proposition consists of three parts: that about which judgment is passed (subject), that with which judgment is passed (predicate), and the nexus between them which is required to turn the former two parts into a proposition and which is signified by the copula (56.9–10).

The copula, too, is in principle required for a sentence to express a proposition, but because it is often obvious that its signification is intended, it has ceased to be

mentioned in many languages (56.12–13). Ḥillī does not mention Rāzī’s Repetition Argument here, but clearly reacts to it in line with Ṭūsī’s response. He states that, generally, no matter whether the predicate is a name, derived name, or statement-word, the copula—be it nominal (*huwa*) or verbal (*yakūn/yūjad*)—needs to be expressed, and that “*Zayd huwa kātib*,” “*Zayd yakūnu kātiban*,” and “*Zayd yūjadu kātiban*” all signify the same proposition (56.14–16).

Oddly, Ḥillī makes no distinction between temporal and atemporal propositions here. However, that general rule notwithstanding, predicates that are verbs may connect by themselves to the subject. This is because even though the pronoun implied by verbs and derived names is not the same as the copula, so that the correct analysis of “*Zayd yaktub*” is “*Zayd huwa yaktubu huwa*,” the second “*huwa*” specifies the nexus to a determinate subject by referring back to it: “*Zayd kātib*” thus ultimately expresses the same proposition as “*Zayd yakūnu kātiban*” and hence in such cases the copula is already expressed and there is no need to express it again (56.17–57.3).

Following Ṭūsī, Ḥillī proposes what is basically Rāzī’s position, namely that predicates that are statement-words and derived names connect by themselves to the subject, only for different reasons: it is not part of the essence of the concepts signified by these word-types that they connect to a subject in themselves, but as Abharī and Ṭūsī had suggested, it is the context of the sentence that allows for such word-types to signify the nexus to a determinate subject by referring back to a subject already mentioned. So far, this is nothing entirely new.

There follows a paragraph on the question of whether there are distinct nexus in a proposition. It is titled “Secret,” a formal device of the *al-Asrār al-khaṭṭiyya* (Hidden Secrets) appended to the exposition of a chapter in which Ḥillī advances what he holds to be the truth on certain controversial issues. Ḥillī begins by rehearsing Kātibī’s position: the nexus of subject to predicate by subject-hood is not the same as that of the predicate to the subject by predicate-hood; they are distinct in that the former is external to the quiddity of the proposition and the latter internal but they imply each other’s modality (57.7–10).

Ḥillī mentions that some of the later logicians (*ba’d al-muta’akhkhirin*), by which he must mean Kātibī and perhaps Urmawī, objected to the argument that the nexus of the subject to the predicate by predicate-hood is not the same as that by subject-hood (57.11–19). The objection is the one that Kātibī had offered: the argument is only correct if the original proposition were an expression of the nexus of its subject to its predicate by subject-hood and the converse an expression of the nexus of the original subject to the original predicate by predicate-hood. But this is not the case: the former nexus is external to the quiddity of the proposition, and the second internal. Hence, as it does not follow from the identity of two things one of which is external to a quiddity while the other is internal to it that they be distinct, it also does not follow that the two nexus be distinct. The same can be applied to the predicate and its nexus (57.20–58.3). Ḥillī says:

TEXT 64: IBN AL-MUṬAHHAR AL-ḤILLĪ, *AL-ASRĀR AL-KHAṬIYYA FĪ L-ʿULŪM AL-ʿAQLIYYA* (ANONYMOUS, QUM 2000), 58.4–8

I say: The true position here is to say the following. If we say “A [is] B,” there are two nexus: one of them is the nexus from A to B by subject-hood, and the second is that from B to A by predicate-hood. And if we say “B [is] A,” there are two nexus: one of them is the nexus from B to A by subject-hood, and the second is that from A to B by predicate-hood. If the first and the fourth nexus, and the second and the third, were identical, then what is understood from the proposition and from its converse would imply each other. But this is absurd.

Ḥillī follows Kātibī here, except that he simply denies the identity of any of the four nexus and does not even say, as Kātibī had, that the first and the fourth, as well as the second and the third, nexus are their counterparts in potentiality.³⁵

Ḥillī’s other major summa, the *Marāṣid al-tadqīq wa maqāṣid al-tahqīq*, contained the three parts typical of philosophical works—Logic, Metaphysics, and Physics—but only the Logic part has come down to us.³⁶ We do not know for certain when the work was composed but it is likely later than all his other works discussed earlier, save the *Muḥākamāt*. Its structure is different from that of the Logic of his early philosophical work in the *Asrār* as well as from that of the logic part in Avicenna’s *Ishārāt*. The work is divided into four “places of destination” (*maqāṣid*): “Eisagoge” (*Isāghūjī*), “The Proposition and Its Properties,” “The Syllogism,” and “Demonstration and Dialectics,” each containing a number of “observation points” (*marāṣid*).

It is noteworthy that, in contrast to presentations of logic that follow the *Ishārāt* structure, it includes dialectics, but excludes all other syllogistic arts, like Rhetoric or Poetics, which Ṭūsī had included in the *Tajrīd al-manṭiq* and in the *Asās*.³⁷ This may be taken to reflect the increasing integration of the new dialectics within logic toward the end of the 7th/13th century.

While it is true that Ḥillī’s method consists largely in the synthesis of different emerging Avicennisms—with an evident inclination to the Ṭūsian line—this does not preclude him from advancing innovations on certain logical issues.³⁸ Concerning the analysis of simple categorical statements in the *Marāṣid*, Ḥillī here describes predication (*ḥaml*) and subjection (*waḍʿ*) in a Rāzian fashion as secondary intelligibles that accrue to first intelligibles and have no actualization in reality: there is nothing that is a predicate in the extramental world (92.6–7).

At the beginning of the second “Destination” (*maqṣid*) Ḥillī standardly presents the categorical proposition as consisting of three parts: the subject, the predicate, and the copula between them, connecting the subject such that it is the predicate, or that it is not it (134.15–16). Ḥillī is, like Rāzī, a nominalist about the quantifier and a realist about the nexus (136.10–15). With regard to Rāzī’s Repetition Argument, he here takes a middle position between Avicenna/Ṭūsī and Rāzī: verbs and derived names in the predicate place do not need a copula in the way non-derived names do, but they still need to signify a determinate subject (which

supposedly they do in the context of a sentence). For Ḥillī, as for Avicenna and Tūsī, binary propositions are those in which the auxiliary is suppressed. Unlike Avicenna and Tūsī, and arguably like Rāzī, he calls those propositions incomplete ternary in which there is no copula expressed as the predicate is a verb or derived name (135.5–10).

The question whether verbs and derived names signify a nexus to a determinate subject—by means of the implied pronoun that refers back to the subject—is here simply dismissed as a purely linguistic (*lughawī*) controversy (135.11–13). In the *Marāṣid* Ḥillī does not talk about the four distinct nexus that he mentions in the *Asrār* and the *Muḥākamāt*. He simply restates Kātibī's tentative position, namely that the nexus of subject to predicate is distinct from the nexus of predicate to subject, but that they are logically related. The reason is this. If the subject is such that, insofar as the predicate subsists for it, it is necessary, then likewise the predicate, insofar as it subsists for the subject, is necessary. Hence it is impossible that the two nexus differ in mode or modality, and one of them is in the potentiality of the other (136.1–5).

Even though Ḥillī made substantial contributions to logical theory—not least in his analysis of the ways in which the subject can be presented in a proposition—with regard to questions the tradition raised about the copula and the nexus signified by it, he by and large sided with the positions of his predecessors, notably including Rāzī and Kātibī. It was however not until the commentaries written by his student Quṭb al-Dīn al-Rāzī that the traditional accounts of the copula were comprehensively challenged.

THE GREAT COMMENTARIES OF QUṬB AL-DĪN AL-RĀZĪ AL-TAḤTĀNĪ: ELIMINATING THE COPULA

Quṭb al-Dīn al-Rāzī al-Taḥtānī was born and raised around the turn of the 8th/14th century in Warāmīn, the new Mongol administrative center in Rayy.³⁹ He studied with the Twelver Shī'ī Ḥillī (Taḥtānī's own sectarian affiliation remains unclear: he might have always been, or else later in his life become, a Sunnī),⁴⁰ and at a relatively young age appears to have received a teaching certificate (*ijāza*) from him. Shihāb al-Dīn al-Shushtarī (d. 1019/1610) reports that on his travels to Syria he read on the back of Ḥillī's copy of the *Qawā'id [al-jaliyya fī sharḥ al-Risāla al-Shamsiyya?]* in Ḥillī's hand the following *ijāza* dated to 713/1313:⁴¹

[Quṭb al-Dīn] al-Rāzī studied intensively with me most of this treatise, researching, verifying, and establishing [the text's] accuracy [. . .] I have authorized him to transmit this treatise and also my other writings and transmissions [. . .] and all of our predecessors' treatises in an uninterrupted chain of transmission through my authority—being [as he is] well qualified to do that.⁴²

It is likely that Ḥillī and Taḥtānī both traveled, studied, and taught in the “mobile school” (*madrasa-yi sayyāra*) that was part of the Ilkhān Öljaitū's entourage on his

expeditions.⁴³ If that was indeed the case, it is not unlikely that Qutb al-Dīn also studied at the Marāgha observatory at some point. It is doubtful that he studied with the other famous Qutb al-Dīn, the astronomer and scholar al-Shīrāzī (d. 710/1311), as is sometimes claimed in the sources, and the story that Shīrāzī suggested to Taḥṭānī to write a *Muḥākamāt* is almost certainly a myth.⁴⁴

The connection with another Sunnī scholar who also traveled with the mobile school and who authored the standard work on ‘ilm al-waḍ‘, ‘Aḍud al-Dīn al-Ījī (d. 756/1355), is more likely: Taḥṭānī may have studied with him at Ṣultāniyya, the new Īlkhānid capital near Zanjān when Ījī was supreme judge (*qāḍī l-mamālīk*) under the Īlkhān Abū Sa‘īd (reg. 716–736/1316–1335).⁴⁵ Toward the end of his life, Taḥṭānī taught at the Ṣāhiriyya madrasa in Damascus and died there in 766/1365.

Qutb al-Dīn Taḥṭānī was arguably the most influential Arabic logician of the 8th/14th century, if measured against the sheer number of super-commentaries and glosses elicited by his two monumental lemmatic commentaries on the new logical *summae*: the *Lawāmi‘ al-asrār fī sharḥ Maṭāli‘ al-anwār* (The Blazing Secrets in Commenting upon the Dawning Lights) on Urmawī’s *Maṭāli‘* (completed 728/1328) and the *Taḥrīr al-qawā‘id al-manṭiqiyya bi-sharḥ al-Risāla al-Shamsiyya* (Redacting the Rules of Logic in Commenting upon the Epistle for Shams al-Dīn) on Kātibī’s *Shamsiyya* (completed 729/1329).⁴⁶ The former commentary was dedicated to the Īlkhānid vizier Ghiyāth al-Dīn Muḥammad (d. 736/1336), the latter to the vizier’s younger brother.

The commentary on Urmawī can be regarded as Taḥṭānī’s most thorough textual confrontation with the revisionist Avicennans. Overall, in this work as in others, Taḥṭānī sought to rehabilitate Avicenna against the revisionists, believing that almost all departures from Avicenna proposed by Khūnājī and his followers were ill considered and based on misunderstandings.⁴⁷ Besides these two major commentaries and some shorter treatises on specific topics in logic, Taḥṭānī completed in 756/1355 his own *Muḥākamāt* on the *Ishārāt* commentaries. The *Muḥākamāt* was widely glossed in later centuries, but the Logic part seems to have enjoyed less popularity than the Metaphysics and Physics, possibly because it was superseded by the *Lawāmi‘*.⁴⁸

A Revised View in a Later Addition to the Lawāmi‘ al-asrār

The *Lawāmi‘* itself contains a later addition transmitted in only two MSS that shows that Taḥṭānī was troubled by traditional accounts of the syntax and semantics of atomic propositions. For him, the main problem in these accounts was a confused understanding of the copula. I have discussed in greater detail elsewhere why he might have found traditional accounts so problematic and what might have led him to criticize Avicenna—an otherwise unusual gesture for him—and to revise his own views.⁴⁹

It seems to me that Taḥṭānī, after having discussed in a piecemeal fashion the lemmata of Urmawī’s entire text, realized that the positions of his predecessors, including Avicenna, on the problem of predication and the role of the copula were

incoherent, so that he revisited several of his own comments and then, at a later date, inserted a passage into the finished manuscript in which he summarized his considered opinion.

Among the issues that might have led him to reformulate his views are (1) the classification of utterance types, (2) the semantics of first- and second-person inflected verbs, (3) the account of “*huwa*” as a non-temporal copula, and, perhaps most importantly, the (4) question of the number of parts in a proposition.⁵⁰ The result is an account of the proposition according to which every Arabic expression that can appear as a predicate signifies as part of its meaning that it has a nexus to an indeterminate subject, and that it is by mentioning the subject that the judgment is expressed. This account is extended to hyparctic verbs that include in their signification the nexus to both an indeterminate subject and an indeterminate predicate. The copula “*huwa*” is not needed on this account—Arabic is in perfect order with regard to the expression of logical syntax, and the Avicennan distinction between binary and ternary propositions is rendered practically obsolete.

All this is in some respects close to the Fregean analysis, in that Taḥṭānī clearly distinguishes between judgment and judgeable content, eliminates the copula from the analysis of (most) propositions, and formulates a unified criterion for the unsaturatedness of 1-place and 2-place predicates, no matter of which utterance type, that become saturated once their empty places are filled by mentioning the missing expressions.

Central to this novel account is Taḥṭānī’s contention—regarding (4)—that a simple categorical proposition consists of four parts, not three: the meaning of the subject, the meaning of the predicate, the nexus between the two, and additionally the judgment of the obtaining or not of the nexus.⁵¹ Commenting on the passage by Urmawī, Taḥṭānī interestingly presents the proposition as a hylomorphic compound as Rāzī did, and then first suggests that the proposition in fact consists of four parts, countering a possible objection:⁵²

TEXT 65: QUṬB AL-DĪN AL-RĀZĪ, *LAWĀMI‘ AL-ASRĀR* (RAḤMĀNĪ), II 17.4–19.2

But it might be said: The parts of the proposition, when analyzed, are four, i.e., the subject, the predicate, the nexus between them, and the judgment, that is: the obtaining or not of the nexus. If, then, that which is signified by the copula is the nexus, then inevitably there must be another expression for the judgment, so that the expressions correspond to the meanings. And if [what is signified by the copula] is the judgment, then the words of the author [Urmawī] “the copula is what signifies the nexus” are not correct, and the expression “*huwa*” in “Zayd, he (*huwa*) is not a writer” is not a copula. [. . .]

Then we say: That which signifies the judgment [also] signifies the nexus, and there is no need for signifying it with another expression. As for the expression “*huwa*,” it is the affirmative copula, just as they express the negational copula independently of it with a negational particle. Then, the copula leaves a support for the

mind to conceive its meaning, and the proposition in its expression is divided into two parts. Because if it is mentioned in it, it is ternary, and if it is not mentioned, but supplied in the mind, then it is binary.

Here, Taḥṭānī still seems to embrace the Avicennan idea that “*huwa*” functions as a copula—except that it signifies not only the nexus, but also the judgment—and that hence propositions may be classified into binary and ternary ones, depending on whether or not the copula is made explicit. Shortly after, however, he voices his disagreement with taking “*huwa*” to be a copula.

TEXT 66: QUṬB AL-DĪN AL-RĀZĪ, *LAWĀMI ‘AL-ASRĀR* (RAḤMĀNĪ), II 20.5–8

There is an issue with what [Avicenna] transmitted about the Arabic language. For the expressions “he,” “she,” and “they” (*huwa*, *hiya*, *humā*, *hum*, *hunna*) are just pronouns and they are used when something has been mentioned before, and they do not have the signification of the nexus at all, let alone the judgment-nexus. They only signify that they refer to what came before, and there is nothing signified by “*huwa*” in the sentence “Zayd, he is alive (*Zayd huwa ḥayyun*)” except “Zayd,” so how is it supposed to be a copula?

Whatever the copula is, it was supposed to signify the judgment-nexus. But pronouns do not do that. In fact, they do not signify any nexus at all according to Taḥṭānī. He then argues:

TEXT 67: QUṬB AL-DĪN AL-RĀZĪ, *LAWĀMI ‘AL-ASRĀR* (RAḤMĀNĪ), II 20.9–21.7

If you said: What is meant by it [the copula] is the partitive and the copulative pronoun, then we say: the examples in which he adduced [“*huwa*”] are not such, for he expresses this in flawless Arabic [elsewhere] in his book; the partitive pronoun also does not signify for [the grammarians] the judgment-nexus; rather [it signifies] the difference between the attribute and the predicate.

As for the hyparctic verbs, they do in fact signify the nexus, but they do not signify the judgment, as has become clear from the [discussion of] the present-tense third-person inflected verb, because if they did signify the judgment, then they would be susceptible to truth and falsehood, but this is not so. Moreover, considering [hyparctic verbs to be] copulae here contradicts what was said earlier in [the chapter on] expressions about taking [hyparctic verbs to be] different from auxiliaries [i.e., Avicenna had said that auxiliaries and hyparctic verbs were both defective in their meaning, but that auxiliaries behaved to names as hyparctic verbs to proper verbs (I 126.2ff)].⁵³ It is clear that what [Avicenna] takes to be a copula in Arabic is in fact not a copula. Rather, the copula for them [the grammarians] is the nominative vocalization of the declension and what is analogous to it, because it signifies the meaning of being an agent [grammatical subject], which is [what the grammarians call] nexus of subordination (*isnād*). Thus, if there is a construction of declined [elements], then the proposition is ternary, as when we say “Zayd [is] standing (*Zaydun qā’imun*).” And if [the elements are] indeclinable then the proposition is binary, as when we

say: “This [is] Sibawayhi (*hādhā Sibawayhi*)”; that is why they say that both elements [in the latter example] are in the state of a nominative noun, pointing at the hidden-ness of the copula in the soul.

Wondering whether, if the judgment is a distinct part of the proposition, there must be a feature on the level of language signifying it, Taḥṭānī comes to question the very idea that partitive pronouns like “*huwa*” should function as a copula. It is in this passage that Taḥṭānī reconsiders two issues that he discussed earlier in the commentary (I 128–138), namely, (1) the definitions of different word-classes, and (2) the semantics of inflected verbs. Both issues he discussed with reference to Avicenna’s elaborations in *al-‘Ibāra* of the *Shifā’*.⁵⁴

On his account, third-person inflected verbs do signify a nexus (as do derived names) but not the judgment-nexus—until a subject is mentioned. Further, hyp-arctic verbs are a word-class distinct from names, statement-words, and particles, because they are semantically incomplete like particles but tensed like real verbs and thus likewise signify a nexus but not the judgment—until subject and predicate are mentioned. Based on these observations, Taḥṭānī is the first to suggest that “*huwa*” is not a copula at all, for it signifies neither a nexus nor the judgment.

Still, he thinks there must some feature of language signifying the nexus, and that feature simply is the fact that in a declarative sentence subject and predicate are put in the nominative case, signified by the vocalization. Only in the rare cases where grammatical irregularities of indeclinable words come into play is the expression of the proposition binary. Admittedly, the formulation in the passage is not a paradigm of clarity. It seems that Taḥṭānī wrestled with these problems for a while until he decided to insert a clarification that is preserved in only two manuscripts:⁵⁵

TEXT 68: QUṬB AL-DĪN AL-RĀZĪ, *LAWĀMI ‘AL-ASRĀR* (RAḤMĀNĪ), II 26.6–27.18

Know that in this investigation there is a confusion (*khabṭ*) that must be pointed out. We say: When the proposition comprises three meanings, the meaning of the subject, the meaning of the predicate, and the meaning of the judgment, in this case the expression is not complete unless there are three signs for the three meanings; then the proposition is tripartite. And if only two meanings are signified, then the proposition is bipartite.

If the predicate is a verb or a derived noun, the meaning of the predicate and of the judgment-nexus are conveyed by a single expression. As for the predicate, this is clear. As for the meaning of the judgment-nexus, this is because the verb contains the nexus of the event to a determinate subject, as set out [earlier] in the investigation of expressions. If the subject is stated, then [the verb] positively conveys that nexus: considering [the verb] inasmuch as it signifies the nexus of a determinate predicate to the subject, it is the copula; considering it inasmuch as it signifies the event, it is the predicate. In this case the proposition is ternary, for what it means for a proposition to be ternary is just for it to have something in it that signifies the

judgment-nexus. But the first- or second-person inflected verb, if it conveys [these] three meanings, is a ternary proposition as well.

Let it not be thought that the copula is that which signifies the judgment-nexus alone, because otherwise hyarctic verbs would not be copulae. For just as they signify the nexus, they also signify its time.

The difference between [hyarctic] and real verbs—even if they share the property of containing the nexus of a determinate predicate to a determinate subject—is that the real verb signifies by itself the determinate predicate, unlike the hyarctic verbs, for they do not signify a determinate subject, or a determinate predicate.

Just as the real verb, if its subject is explicitly stated, signifies the judgment-nexus, so does the hyarctic verb, if its subject and predicate are explicitly stated. And here there is no need in the connection of the predicate to the subject for the provision of a pronoun, as *the Shaykh [Avicenna] falsely assumed*. Similarly, if the real verb comes after the subject, then there is no need for a pronoun, for on account of the mere mention of the subject the judgment-nexus is understood from [the verb]. In this case all [three] meanings of the proposition are conveyed. [. . .] There is no difference between the meanings conveyed by the propositions “Got up Zayd” (*qama Zayd*) and “Zayd got up” (*Zayd qama*).⁵⁶

When the predicate is a non-derived name (*ism jāmid*), if there are nominative vocalizations in the proposition, then it is ternary, because [these vowel signs] signify the nexus of subordination (*isnād*), and this is the judgment-nexus; if there are no nominative vocalizations in [the proposition], then nothing at all in [the proposition] signifies a nexus, and it is a binary proposition.

This is what was summarized after careful reconsideration. Think about it and consider!

This passage is remarkable for several reasons. In the first paragraph Taḥṭānī reiterates the position that really only rare cases that are due to grammatical irregularities like “*hādḥā Sibawayhi*” count as binary or *secundum adiacens* propositions. This is not at all the distinction that Aristotle or Avicenna had intended, but Quṭb al-Dīn’s revision of the traditional position shows that he had a keen sense for the fact that the Arabic tradition, including Avicenna, had held on to some Aristotelian doctrines that in fact made little sense in Arabic. The revised *secundum/tertium adiacens* distinction can be seen as an upshot of Taḥṭānī’s semantic considerations and his criticism of Avicenna’s use of the copula “*huwa*” in the following way.

Coming from the semantic analysis of third-person inflected verbs, Taḥṭānī develops a unified notion of unsaturatedness for all predicates, including those in nominal sentences. Based on his intuition that simple expressions may co-signify the judgment-nexus once placed in the *context of the sentence* and his position that there are four conceptually distinct parts in atomic propositions, he argues that all possible predicates, that is, real verbs, hyarctic verbs, and derived and non-derived names (even in nominal sentences), contain in themselves and as simple expressions a signification of a nexus to one or more indeterminate syntactical elements

that need to be supplied for the signification of the judgment to obtain. Let us say they contain a signification of their unsaturatedness.

In the case of verbs, their unsaturatedness, or, in his words, the nexus to an indeterminate subject, is signified by their augment; in the case of nouns in nominal sentences, their unsaturatedness is signified by their vocalization. Hence, contrary to what Avicenna thought, there is no need to provide “*huwa*” in order to complete an atomic proposition. This not only makes the theory more economical, but it does away with an awkward artificiality of language that was a remnant of the Arabic translation of Aristotle’s Greek. It seems that for Qutb al-Dīn there was no semantic intuition that would qualify “*huwa*” as a copula.

The crucial point for which I take Qutb al-Dīn to have penned this later addition is that the judgment, which as we have seen is signified by the same sign that signifies the nexus, is expressed when an unsaturated predicate is saturated by a subject expression. In other words, a proposition expresses a judgment once a value is assigned to the variables in the argument places. Remarkable here is that Taḥṭānī, based on his argument that hyparctic verbs are a distinct category of simple expressions, because they do not signify by themselves a complete meaning, formulates what in modern terminology would be called the distinction between 1-place and 2-place predicates. While real verbs have one empty argument place, hyparctic verbs are doubly unsaturated: they have two empty argument places. Filling these argument places, or assigning values to the variables, amounts to signifying the judgment-nexus: “Just as the real verb, if its subject is explicitly stated, signifies the judgment-nexus, so does the hyparctic verb, if its subject and predicate are explicitly stated” (II 27.6–8). The same applies to derived names. Even non-derived names in a nominal sentence work the same way: if the empty argument place that is signified by the vocalization is filled, the judgment-nexus is expressed.

Since the copula needed to signify the judgment-nexus is on Taḥṭānī’s view nothing but the syntactic property intrinsic to the semantic content of predicates when their argument place is filled, it should be clear why he thinks that there is no need to use an awkwardly artificial term like “*huwa*” as a third element in propositions. But then, since most propositions that consist of two simple expressions signify the three (or four, if nexus and judgment are distinguished) meanings needed for a complete atomic proposition, it makes little sense to classify atomic propositions into binary and ternary depending on whether or not a copula is used, or what kind of simple expression functions as a copula. All that remains is to acknowledge that there are certain propositions for which a semantic analysis may not identify these three meanings because of grammatical irregularities. But such cases are for grammarians to sort out, not logicians.

Based on this analysis Taḥṭānī has a decidedly distinct take on the question of whether there are two distinct nexus in a proposition to account for modality and conversion. He summarizes (II 40.5–42.5) his lengthy discussion of Urmawī’s, Rāzī’s, and Khūnajī’s (with whom he agrees) arguments (II 31–40), emphasizing his view that the parts of the proposition are four. All of them must be present in

the mind for there to be a proposition: and as there are numerous possible nexus for the concept signified by the predicate, there must be present in the mind not only a specific nexus, say the nexus of *writer* to *Zayd*, but also the judgment that this specific nexus in fact obtains. If the former is not present in the mind, there is no way the latter can become present in the mind. If the former is present, but not the latter, there still is no proposition, as is the case with doubts and fictions. Only when a judgment occurs, a property occurs to “*Zayd*,” namely that of being a subject, and another property to “*writer*,” namely that of being a predicate. Hence predicate-hood and subject-hood are only realized once a judgment occurs, so that both nexus—that by subject-hood and that by predicate-hood—are not realized before the judgment is realized. Therefore, neither of them is part of the quiddity of a proposition.

Criticism in the Muḥākamāt

We do not know when Taḥṭānī added the passage to the *Lawāmi*.⁶ But it seems that he had formed his considered opinion before he wrote his *Muḥākamāt*, because what he says in his comment on the passage that Rāzī had used to advance his Repetition Argument reflects the points made in the later addition quoted earlier. And it also seems he knew Samarqandī’s *Bishārāt*, which suggests he might also have known the *Qisṭās*, and gotten the idea of the judgment-nexus from him. The beginnings of their respective comments on the lemma are strikingly similar.

TEXT 69 (SAMARQANDĪ/TAḤṬĀNĪ): SHAMS AL-DĪN AL-SAMARQANDĪ, *BISHĀRĀT AL-ISHĀRĀT* (SEE TEXT 60)/QUṬB AL-DĪN AL-RĀZĪ, *AL-MUḤĀKAMĀT BAYNA SHARḤAY L-ISHĀRĀT* (ANONYMOUS, TEHRAN 1965 [1393]), 125 (INFRA)

I say: when he explained that the negational particle is a part of the predicate, then the proposition is metathetic. If not, it is positive. It is necessary to explain this so it is known what the difference is between the negational particle that is part of the predicate and that which is not.

We say: The categorical proposition is composed of three parts. The meaning of the subject, the meaning of the predicate, and the meaning of the connection (*ijtimāʿ*) between them.

If one is to be conspicuous about the correspondence between expressions and meanings, then a third expression signifying the meaning of the connection is needed. This is the copula.

I say: when he explained that the negational particle is a part of the predicate, then the proposition is metathetic. If not, it is positive. It is necessary to explain this so it is known what the difference is between the negational particle that is part of the predicate and that which is not.

We say: The categorical proposition is composed of three parts. The subject, the predicate, and the nexus between them, which connects the predicate to the subject.

Just as it is right to signify the subject and the predicate by an expression, so it is right that the nexus be signified by an expression, so that the expressions correspond to the meanings. This utterance is called the copula.

But Taḥṭānī continues to criticize the very exposition that their commentaries share almost verbatim, by using similar wording to that in Samarqandī's *Qisṭās* to argue for the conceptually distinct judgment-nexus as a fourth part of the proposition.

TEXT 70: QUṬB AL-DĪN AL-RĀZĪ AL-TAḤṬĀNĪ, *AL-MUḤĀKAMĀT BAYNA SHARḤAY L-ISHĀRĀT* (ANONYMOUS, TEHRAN 1965 [1393]), 125–126 (INFRA)

Thus, we say: The categorical proposition is composed of three parts, the meaning of the subject, the meaning of the predicate, and the meaning of the combination of the two. Since the parallelism extends to utterances and meanings, inevitably there must be a third utterance that signifies the meaning of the combination, and this is the copula. This is the argument that people give, to the effect that the concept of the copula is the nexus between the meaning of the subject and the meaning of the predicate—but the verification [of the matter] requires that the concept of [the copula] is the *occurrence* of the nexus if it is an affirmation, or the lack of its occurrence if it is a negation. Hence, we say that the argument here should be to the effect that the concept of the copula is the nexus, which is the place of the occurrence of affirmation and negation, because the combination of two meanings occurs by considering the nexus *simpliciter*, whereas its occurrence or lack thereof is something additional to the meaning of combination. When there is a meaning-connection between the verb and the agent-noun, then the connection between them does not require the mentioning of a copula. This is evident from the meaning of the verb, as we said. If the nexus to the subject is a part of its concept, then there is no need for a copula when we say “Zayd said,” in contrast to “Said Zayd,” because here “Zayd” is not an agent-noun, but its agent-noun is the hidden pronoun, and the sentence is predicated of it.

In this comment Taḥṭānī first provides an exposition of his revised view on the analysis of propositions, insisting on the distinction between nexus and judgment. Referring to his discussions of the semantics of verbs, he reiterates that the copula is not needed to express the nexus, for verbs and derived names connect to the subject by dint of their semantic structure (*irtibāṭ ma‘nawī*). Next, he discusses Rāzī's Repetition Argument, which he thinks contains in fact a twofold objection to Avicenna.

TEXT 71: QUṬB AL-DĪN AL-RĀZĪ AL-TAḤṬĀNĪ, *AL-MUḤĀKAMĀT BAYNA SHARḤAY L-ISHĀRĀT* (ANONYMOUS, TEHRAN 1965 [1393]), 126–128 (INFRA)

If you say: Why is it not permissible that the hidden pronoun connects the sentence to Zayd, then we say: Because the copula is an auxiliary and the agent-noun is a name, and it is impossible that one utterance be both name and auxiliary, likewise the derived names, since they fall in the place of the verbs, connect their agent-nouns by a connection in terms (*min jihati*) of the meaning. For example, when you say: “*a-qā'im Zayd* [Standing [is] Zayd?]” this is like when we say “*a-yaqūmu Zayd* [Stands Zayd?],” in distinction to “*Zayd qā'im* [Zayd [is] standing],” for it requires the copula to prevent that “Zayd” is the agent-noun of “standing.” The objection raised by the Imām [al-Rāzī] here contains in fact two aspects of an objection.

The first is that the Shaykh [Avicenna] mentioned in the *Eastern Philosophy* that the proposition is only binary when no copula is mentioned in it, either on account of not needing one, because its predicate is a statement-word or derived name that comprise the mentioned nexus, or on account of the economy [of expression], which is explained by the fact that derived names contain the signification of the nexus and there is thus no need for the copula. But [Avicenna's] words here, "and it really should be said 'Zayd, he [is a] writer,'" outright deny that. Thus, the commentator [Ṭūsī] pointed out that the two accounts converge, in that the independence of statement-words and derived names from the copula only applies with respect to their agent-nouns and the subject here is not an agent-noun.

The second is that "writer" is in fact one of the derived names, and they are connected all by themselves to their subjects on account of them signifying meanings that subsist for indeterminate subjects. For "writer," for example, does not signify writing alone, but it also signifies the subsistence of writing for something, and that is the nexus obtaining between writing and its subject. Since the nexus is internal to the concept of derived names [according to Rāzī], there is no need to mention a simple expression signifying the nexus, exactly as is the case with verbs. The commentator [Ṭūsī] says that this is careless [on the part of Rāzī], because the connection of the verb and the derived name [happens] all by itself only with the agent-noun, and what precedes them is not an agent-noun.

The first objection is that Avicenna contradicts himself by, on the one hand, saying that derived names connect to a subject by themselves, because they contain the signification of a nexus, and, on the other hand, in the *Ishārāt*, urging use of the copula "*huwa*" in sentences like "*Zayd huwa kātib*," which clearly have a derived name as a predicate. The second is that in such sentences mentioning the copula in fact causes a repetition. Both objections, according to Taḥṭānī, were countered by Ṭūsī, who said that verbs and derived names only connect by themselves insofar as they connect to an agent-noun preceding it. But Taḥṭānī has a further criticism of Ṭūsī's position:

TEXT 72: QUṬB AL-DĪN AL-RĀZĪ AL-TAḤṬĀNĪ, *AL-MUHĀKAMĀT BAYNA SHARḤAY L-ISHĀRĀT* (ANONYMOUS, TEHRAN 1965 [1393]), 128 (INFRA)

But there is an issue here. For from "Zayd [is] standing" [*Zayd qā'im*] we understand nothing but the judgment of Zayd's standing, just as we understand that from "Zayd got up" [*qāma Zayd*] as well. In both compounds that about which judgment is passed is Zayd, and that with which judgment is passed is [the act of] standing. As for that with which judgment is passed in the compound, it is the totality of verbs and agent-nouns, and that is a matter that does not attach to the meaning. The grammarians, when they were attempting to preserve their principles, said that it was necessary for the verb to precede the agent-noun [to avoid] confusion and disorder; they made it obligatory to conceal the agent-noun in the verb, which really should succeed the verb, if it is made explicit. But there is no verification for this argument because the Arabs who are not steeped in the science of grammar and the account of

hidden pronouns still understand from both compounds the intended meaning. If it were not for that compound, there would be no need for hidden pronouns for such cases. For the Kūfan [grammarians] did not hide the agent-noun, but rather put the nominative on what preceded the verb. We concede this, but the nexus of the succeeding verb is not to the utterance of a pronoun, but to its meaning, and its meaning is nothing but [the meaning of] “Zayd” that precedes it. It may be conceded that the verb is connected to what connects to it by itself, and then the succeeding verb is connected to Zayd by itself and there is no need for a copula.

Ṭūsī’s argument is groundless, Taḥṭānī concludes, for it rests on mere grammatical convention, which could well be otherwise. As proof he adduces the fact that the man in the street has no trouble understanding what is meant by Ṭūsī’s example sentences, no matter the word order or the lack of grammatical propriety. Hence, there is no need for a copula.

CONCLUSIONS

If the discussions on the analysis of atomic propositions and the role of the copula are at all indicative of broader developments in the history of Arabic logic, we may note the following points. First, it would not seem that the 8th/14th century was the beginning of ossification in the rational sciences, of which logic is the prime example. It would seem that the problem was discussed more intensely and more widely than before. There seems to be little connection between the inventiveness and originality of a text and the genre it was written in.

While some commentaries on logical works, like those Ḥillī wrote on the handbooks of his teachers, are programmatically geared to explaining difficult texts (as some of the *Ishārāt* commentaries were, while others were openly problematizing), some of the most inventive contributions to the problem of the copula came from commentaries, like Taḥṭānī’s *Lawāmi*, or even from auto-commentaries, like Samarqandī’s *Sharḥ Qisṭās al-afkār*.

The systematic integration of *ādāb al-baḥṭh* into the logical canon that began with Samarqandī is an expression of the cross-pollination between this newly codified science and research in logic. Merging the Islamic tradition of juridical eristics with the principles of Aristotelian propositional logic made the formalized rules for dialectics not only a part of the logical canon, but also an integral part of the logicians’ methodology. I suggest that the adoption of the dialectical style of writing in logical works blurs the boundaries between independent works and commentaries (as is evidenced by auto-commentaries), so that the deepening of logical questions and original research may occur in both.

We may think of their intertextuality as an ongoing kind of regulated disputation. If that is indeed the case, the numerous unedited commentaries awaiting study in manuscript libraries around the globe will further substantiate the idea

that the post-Avicennan logicians discussed here were not a coda to Ibn Khaldūn's four great Arabic philosophers, but represent an overture to a lively tradition of logical research, which was by then thoroughly Arabic, and fully severed from its Greek roots.

The scholars discussed in this last chapter all made, or likely will be shown to have made, contributions to logical theory more important than those they made to the discussions we traced. But Taḥṭānī's intervention to do away with the traditional accounts of the analysis of atomic propositions is remarkable. However, it was hardly his own imagination alone that led him to it.

His teacher Ḥilli had already revised the traditional doctrine of binary and ternary propositions. Samarqandī had anticipated the distinction between judgment and judgeable content, and in his auto-commentary on the *Qisṭās* raised the point that the combination of subject and predicate may, in Arabic, simply be signified by the syntax that is marked by the signs of declension (*al- 'allāmāt al-i 'rābiyya*). Ḥilli and Samarqandī, in turn, relied on the positions of their predecessors, as the discussions on conversion and the distinct nexus in a proposition show.

The increasing focus, beginning with Abharī and especially his student Kātibī, on the modalities of the nexus in conversion betrays a growing concern with the problems inherent in their conception of the proposition. Even though Taḥṭānī's analysis rests on a notion that I think it is justified calling "unsaturatedness," there is of course no notion of two fundamentally different types like the Fregean concepts and objects, and there is no resistance to moving about an expression from the predicate-place to the subject-place. Whether Taḥṭānī, and all other authors, saw problems with that, and if so, how precisely they accounted for them in their presentation of the syllogistic, is a subject for another study.