

## The “New Logicians” Stirring Things Up

Recent research has begun to explore the highly dynamic intellectual history between the 6th/12th and 9th/15th centuries in the Islamic world.<sup>1</sup> The remainder of this study follows discussions on the problem of predication through this period—long seen as marked by scholastic ossification in the rational sciences—making a larger historical argument that we should perhaps conceive of the history of philosophy, and of logic in particular, in this period as a new overture, rather than a coda to the great Arabic philosophers discussed in the preceding chapters.

The overall historical argument of part 2 is however more specific. Dimitri Gutas, who has arguably done more than anyone to promote the study of post-Avicennan Arabic philosophy, has recently argued that even though philosophy was alive and well long after Avicenna, the kind of philosophy practiced was, after all, no longer the kind of open-ended scientific inquiry into reality that Avicenna had pursued. Instead, it became “para-philosophy,” a pursuit that—albeit formally beholden to the method and aims of the Aristotelian/Avicennan tradition—was employed merely to prove the doctrines of faith by philosophical means.<sup>2</sup> While Gutas’s partial reversal to the view of 19th/20th-century orientalisists is suggested from a much-better-informed vantage point, we still know too little about the contents of too many philosophical works to make such a claim.

The discussions on the problem of predication in the period up to the early 10th/16th century provide a powerful example of how logic, the rational (and Aristotelian) science *par excellence*, not only emancipated itself from its Greek roots but became an independent research discipline. The discussions on the copula show that philosophical investigations into abstract logical problems—utterly useless for any doctrinal purposes—were pursued with vigor and sophistication. Gutas

grants that one or the other science may have been able to “burst the scholastic cocoon” of para-philosophy.<sup>3</sup> The specific point of the material presented here is to suggest that the very idea of a scholastic cocoon may be questionable. Instead, Arabic logic developed, in conversation with other disciplines like *balāgha* or ‘ilm *al-waḍ’*, a strand of research that we can properly call philosophy of language.

#### EARLY AVICENNISMS

Between Avicenna’s death in 428/1037 and the beginning of Fakhr al-Dīn al-Rāzī’s scholarly activity in the last third of the 6th/12th century there was in the Islamic East, even more so than was the case in al-Andalus, a lively engagement with Avicenna’s works.<sup>4</sup> Until recently, scholarship focused on the fierce opposition to Avicenna, and to Aristotelian philosophy as a whole, by the famous Ash‘arī theologian Abū Ḥamīd al-Ghazālī (d. 505/1111).<sup>5</sup> For a long time al-Ghazālī was seen to have dealt the deathblow to philosophy in Islam.<sup>6</sup> However, it has by now become clear that he was instrumental not only for the institutionalization of logic within the scientific canon of the emerging *madrasa* system, but also for the naturalization of the Avicennan version of the Aristotelian philosophical method within what was to become mainstream Sunnī rational theology (Ash‘arī *kalām*).<sup>7</sup>

In that period there were distinct Aristotelian philosophical programs in the Islamic East being carried out in critical conversation with Avicenna.<sup>8</sup> There was, for example, the Aristotelian philosopher and Jewish convert to Islam Abū al-Barākāt al-Baghdādī (d. 556/1164–5), who worked in a more Aristotelian vein largely critical of Avicenna’s reshaping of the discipline.<sup>9</sup> Perhaps on the other end of the spectrum there was the influential Philosophy of Illumination (*Ḥikmat al-ishrāq*) by Shihāb al-Dīn al-Suhrawardī (d. 587/1191), presented as a Neo-Platonic alternative to Aristotelian/Avicennan philosophy, while incorporating many of its elements.<sup>10</sup> Yet another example would be the slightly later philosophical works of ‘Abd al-Laṭīf al-Baghdādī (d. 629/1231).<sup>11</sup> The genealogical line of students spanning from Avicenna to the 7th/13th-century thinkers we are concerned with next represents a more orthodox strand of early Avicennism.<sup>12</sup> It is this latter strand that, spreading from the lands of Khurāsān and Transoxania, was to develop into an intellectual tradition proper, ushering in different forms of antagonistic Avicennisms.<sup>13</sup>

This early “school Avicennism,”<sup>14</sup> characterized by attempts to refine the Avicennan system without leveling fundamental criticisms against it, was mainly represented by Avicenna’s direct student Bahmanyār b. al-Marzubān (d. 458/1066) and his student Abū al-‘Abbās al-Lawkarī (d. ca. 517/1123). The latter wrote the philosophical compendium *Bayān al-ḥaqq* (The Clear Exposition of Truth), which closely resembles the works of Avicenna and Bahmanyār.<sup>15</sup> Al-Lawkarī is credited with having brought Avicennan philosophy from his hometown Marw to Khurāsān.<sup>16</sup> ‘Umar al-Khayyām (d. 517/1126), who frequented Marw but was

mainly based in Nishāpūr, and Sharaf al-Zamān al-Īlāqī (536/1141)—reportedly a student of both al-Lawkarī and al-Khayyām—as well as his student ‘Umar ibn Sahlān al-Sāwī (d. mid 6th/12th century) continued to spread the tradition to Transoxania and likely westward, too, until the mid-6th/12th century, when Rāzī was born.

As Shihadeh has convincingly argued, there was, much in the polemical spirit in which al-Ghazālī’s *Tahāfut al-falāsifa* (The Incoherence of the Philosophers) was written, an Ash‘arī trend incorporating methods and parts (like logic) of the Aristotelian tradition into theological discourse (as happened, e.g., with al-Baghdādī’s *al-Kitāb al-Mu‘tabar*), and at the same time criticizing, often harshly, that very same tradition.<sup>17</sup> One representative of this trend is the jurist and theologian Afḍal al-Dīn ‘Umar b. ‘Alī ibn Ghaylān al-Balkhī (d. ca. 590/1194).<sup>18</sup> Rāzī met and debated with Ibn Ghaylān in Bukhārā around 582/1186 and in his *Munāzarāt* (Debates) describes him as “a Shaykh who is famous in *falsafa* and skillfulness.”<sup>19</sup>

Another representative, who was personally acquainted with both Ibn Ghaylān and Rāzī, was Sharaf al-Dīn Muḥammad ibn Mas‘ūd al-Mas‘ūdī (d. ca. 585/1189–590/1194). Not only did he write a polemic commentary (*shukūk wa-shubah*) on Avicenna’s *Ishārāt* that had a formative impact on Rāzī’s early understanding of Avicennan philosophy, but he was at the same time highly respected by Ibn Ghaylān for his “thorough knowledge of logic, firm grounding in *kalām*, and a disposition to deal with rational matters, paralleled only by *Hujjat al-Islām* Muḥammad al-Ghazālī,” so that he would not be fooled by the Aristotelian philosophers, but could effectively criticize them.<sup>20</sup>

It is in this milieu of a gradual and contested appropriation of Aristotelian philosophy by Ash‘arī theologians, mainly through the works of Avicenna and al-Ghazālī, and to some extent through al-Baghdādī’s *al-Kitāb al-Mu‘tabar*, that we have to understand Rāzī’s work. His education and scholarly activity may be seen as a confluence of traditions, from al-Juwaynī (d. 478/1085) through al-Ghazālī, Muḥammad b. Yaḥyā al-Nayshabūrī (d. 548/1153), his teacher Majd al-Dīn ‘Abd al-Razzāq al-Jīlī (d. after 555/1160), and his own father, on the one hand, and from Avicenna through his students and al-Mas‘ūdī on the other. His own influence on the tradition was mainly due to his commentary on the *Ishārāt*, which sought to steer a middle path between the early school Avicennism and the entirely polemic approach of al-Mas‘ūdī. A similar approach is exhibited by his commentary on *Uyūn al-ḥikma* and his *al-Mulakhkhaṣ*.<sup>21</sup>

Modern scholarship, as well as historical Islamic sources, have tended to depict Islamic intellectual history in the 7th/13th century in terms of an antagonism between the anti-Avicennan Sunnī theologian Rāzī and the influential Shī‘ī theologian Naṣīr al-Dīn al-Ṭūsī (d. 627/1274), who figures as the savior of Avicenna’s philosophy from Rāzī’s attacks.<sup>22</sup> This view came to be embodied in a statement by Ṭūsī that later became proverbial, namely that Rāzī’s commentary (*sharḥ*) was nothing but a calumny (*jarḥ*). However, this statement was in fact not pronounced

by Ṭūsī himself but attributed (though approvingly) to an anonymous wit (*zarīf*).<sup>23</sup> More generally, it has become clear that this statement can only be properly understood from the perspective of a reverential attitude toward Avicenna that both Rāzī and Ṭūsī shared.<sup>24</sup>

The scholarly narrative concerning the history of post-Avicennan Arabic logic, mainly established by Nicolas Rescher's pioneering work in the 1960s and 1970s, assumed that Rāzī was a largely unoriginal logician and that his originality only lay in the re-organization of existent material and the anti-Avicennan thrust of his work.<sup>25</sup> Rescher further thought that there were antagonistic "Western" and "Eastern" developments in the 7th/13th century until the tradition ossified in later centuries.<sup>26</sup> Recent research has begun to revise and refine Rescher's assessments. Rāzī must be seen, in fact, as a very imaginative logician who propelled forward the development of Arabic logic as a research discipline independent from the exegesis of Aristotle's *Organon*.<sup>27</sup> He was, for example, the first to include the fourth-figure syllogism alongside the traditional three in a major philosophical work.<sup>28</sup> That said, Rāzī's younger contemporary Khūnājī now appears to have been an even more innovative logician.<sup>29</sup>

Beginning with Rāzī, the antagonistic nature of appropriating Avicenna's works was played out not so much between an anti-Avicennan Western tradition initiated by Rāzī and a pro-Avicennan Eastern tradition spearheaded by Ṭūsī, but rather between two camps that both read, taught, commented on, and criticized Avicenna from an equally reverential attitude, but disagreed on the method and appropriate extent of critiquing Avicenna. Nor were these camps neatly divided by geography. The tradition most influential in later centuries that we are following was geographically centered around the astronomical observatory of Marāgha in the Western part of modern-day Iran.<sup>30</sup> However, logicians in conversation with this tradition were active as far west as Sicily and as far east as the easternmost part of what is today Uzbekistan.

Tony Street has introduced the term "revisionist" Avicennism for the camp that was ready to substantially revise Avicenna's logic, in opposition to the "orthodox" Avicennans, who tended to defend Avicenna against such revisions.<sup>31</sup> Of course, not all logicians discussed here will neatly fit into one or the other camp—and, of course, not everything they wrote was directly responding to Avicenna: they also wrote independent treatises and commented on one another's works, a process in the course of which new problems and issues could be raised. But many of them align—with or against Avicenna—on some crucial controversial issues, as for example the subject-matter of logic, the immediate implications of conditional and disjunctive propositions, the conversion of possibility propositions, or the productivity of first-figure syllogisms with possibility minors. Thus, we may say that Rāzī and Khūnājī (this chapter), as well as Abharī, Urmawī, and Kātībī (discussed in the next chapter), belong to the "revisionist" camp. On the other hand, Ṭūsī (also discussed in the next chapter) and his student Ḥillī, who in turn taught

Quṭb al-Dīn al-Rāzī (both discussed in chapter 7), all were "orthodox" Avicennans. With the authors treated in chapter 8 the matter is less clear.

The term "revisionist" Avicennism is useful as a tool for historical analysis not only because it allows us to group together certain logicians, but also because it reflects a watershed moment in the 7th/13th century that Ibn Khaldūn captured with the terminology that later logicians would use to group themselves and others. Street's "revisionists" tally well with what Ibn Khaldūn meant to capture by "new/later logicians" (*al-muta'akhkhirūn*), who in polemical contexts are often simply designated as "the author of *al-Kashf* [i.e., Khūnājī] and those who follow him."<sup>32</sup> These are pitted against the "old/earlier logicians" (*mutaqaddimūn*), whom Street's "orthodox" Avicennans aspire to rehabilitate. Ibn Khaldūn writes, in the late 8th/14th century, about this watershed moment in the history of the science of logic in his *Muqaddima*:

The *later scholars* came and changed the technical terms of logic; and they appended to the investigation of the five universals its fruit, which is to say the discussion of definitions and descriptions which they moved from the *Posterior Analytics*; and they dropped the *Categories* because a logician is only accidentally and not essentially interested in that book; and *they appended to On Interpretation the treatment of conversion* (even if it had been in the *Topics* in the texts of the ancients, it is nonetheless in some respects among the things which follow from the treatment of propositions). Moreover, they treated the syllogistic with respect to its productivity generally, not with respect to its matter. They dropped the investigation of [the syllogistic] with respect to matter, which is to say, these five books: *Posterior Analytics*, *Topics*, *Rhetoric*, *Poetics*, and *Sophistical Fallacies* (though sometimes some of them give a brief outline of them). *They have ignored [these five books] as though they had never been*, even though they are important and relied upon in the discipline. Moreover, that part of [the discipline] they have set down they have treated in a penetrating way; they look into it in so far as it is a discipline in its own right, not in so far as it is an instrument for the sciences. Treatment of [the subject as newly conceived] has become lengthy and wide-ranging—the first to do that was *Fakhr al-Dīn al-Rāzī* and after him *Afdal al-Dīn al-Khūnājī*, on whose books the Eastern logicians rely until this day. He has in this discipline the *Disclosing of Secrets*, which is long, but there is also an abridged version entitled *The Concise*, which is good for teaching, and another, *The Sentences*, which consists of only four pages giving a synopsis of the discipline and its principles. Contemporary students use it and profit from it. The books and ways of the ancients have been abandoned as though they had never been, even though they are full of fruits and useful points of logic as we said. God is the Guide to that which is correct.<sup>33</sup>

Ibn Khaldūn's appraisal of the more recent history of Arabic logic is not without some remorse, perhaps indicating an inclination to the more orthodox Avicennans, like Ṭūsī, who did include all of the Aristotelian *Organon* in his Persian summa. He might not be entirely right about the extent to which the "new logicians" eradicated the contents of the other books of the *Organon* from the discipline. Some found their treatment within the new structure of the science.



And there were movements urging a return to the old structure, both within the period discussed and later.<sup>34</sup> But overall, the historicity of the watershed moment Ibn Khaldūn tries to capture and tie to the logicians Rāzī and Khūnajī is borne out by recent studies and indeed the discussions on the problem of predication.<sup>35</sup> The problematizing approach of Rāzī and Khūnajī affected the works of all other authors studied here. Their move away from a largely exegetical to a more problematizing approach ushered in a reconfiguration of logic as a research science, dramatically increasing the scholarly output. The diagram visualizes the relationships of influence between these authors.

#### THE CHALLENGE OF FAKHR AL-DĪN AL-RĀZĪ

Fakhr al-Dīn Muḥammad al-Rāzī was born in 544/1149 in Rayy.<sup>36</sup> His father, Ḍiyā' al-Dīn 'Umar al-Makkī (d. 559/1163–64), a prominent Ash'arī theologian and Shāfi'ī, taught him in theology and law. Al-Makkī had studied with Abū al-Qāsim al-Anṣarī (d. 504/1110), who in turn was a student of al-Juwaynī's (d. 478/1085) and thus represented the later Juwaynīan phase of Ash'arī theology.<sup>37</sup> This theological tradition in which Rāzī was raised is reflected in his early works, for example, in his lengthy summa, probably titled *Uṣūl al-dīn* (Principles of Religion).<sup>38</sup>

His father passed away when he was still young, so Fakhr al-Dīn traveled to Nishāpūr and Marāgha to study with other teachers, like Majd al-Dīn al-Jīlī, a teacher of philosophy and author of a logic book. Majd al-Dīn had studied with one of Ghazālī's most eminent students, Muḥammad b. Yahyā al-Nayshābūrī (d. 548/1153), and he taught the Illuminationist philosopher al-Suhrawardī (d. 587/1191). When Majd al-Dīn was invited to teach at the Mujāhidiyya madrasa in Marāgha, Rāzī accompanied him.<sup>39</sup> Rāzī appears to have traveled elsewhere in Persia, Central Asia, and India, receiving the patronage of the Khwārazmshāhs and the Ghūrīds. He died in Herāt in 606/1210.

Rāzī was a prolific scholar. In contrast to Khūnajī, who was primarily known as a logician and of whom we have no more than a handful of works, Rāzī was first and foremost a theologian and wrote numerous works on a wide range of subjects, mainly on theology (*kalām*), scriptural exegesis (*tafsīr*), jurisprudence (*fiqh*), and Avicennan philosophy (*falsafa*), but including works on literary criticism, physiognomy, and chemistry. However, his output on logic was still substantial. Among his more influential writings on logic are, first and foremost, the commentary on Avicenna's *Ishārāt* (completed after 579/1183–1184 and before 582/1186), together with a critical epitome of it (*Lubāb al-Ishārāt* = *The Kernels of Pointers*) that he completed in 597/1201, and a commentary on Avicenna's *ʿUyūn al-ḥikma* (Elements of Philosophy) that he composed later in his life (604–605/1208–1209).<sup>40</sup> Further, he wrote a short handbook on logic titled *al-Āyāt al-bayyināt* (The Evident Signs), on which Sirāj al-Dīn al-Urmawī (d. 682/1283) wrote a commentary.<sup>41</sup>



The most systematic presentation of Rāzī's logic we find in the Logic part of his summa titled *al-Mulakhkhaṣ* (The Summary), completed shortly before his commentary on the *Ishārāt* in 579/1183–1184. In this work, Rāzī refers the reader to another summa of logic he wrote, by the title of *al-Manṭiq al-kabīr* (The Long Logic), but the unicum manuscript—listed in the catalogue of the Topkapı Palace Library as MS Ahmet III 3401, copied in 667/1268—that is supposed to contain that work appears to be a misattribution.<sup>42</sup> It is however one of the longest works of Arabic logic ever written and must be dated to the mid-7th/13th century.<sup>43</sup>

*Reading Avicenna: Annotations on the Shifā', and Rāzī's Challenge  
in the Commentaries on the Ishārāt and 'Uyūn al-ḥikma*

Rāzī studied and taught logic largely by reading Avicenna. Even though evidence for close textual engagement with the *Shifā'* has been conspicuous by its absence between the 5th/11th and 10th/16th centuries, Di Vincenzo has recently drawn attention to several newly discovered identical marginal glosses (*hāshiyāt*) in nine MSS preserving the *Shifā'*. These can be identified as coming from Rāzī's hand, pointing to a lively exegetical practice of the text, likely in a madrasa context.<sup>44</sup> While the glosses on the *Shifā'* seem to have been intended for study purposes, they at least indicate that Rāzī considered Avicenna's discussion of third-person inflected verbs to stand in need of explanation.<sup>45</sup> The commentaries on the *Ishārāt* and the *'Uyūn al-ḥikma* provided space for a more critical engagement. In the chapter on metathetic and positive predicates (*al-'udūl wa-l-taḥṣīl*) of the commentary on the *Ishārāt*, Rāzī explains an apparent discrepancy between what Avicenna says about the need to express the copula in the *Ishārāt* on the one hand, and in the *Easterners* on the other. Rāzī insinuates that Avicenna might have been indulgent with his wording in the former, urging that his considered opinion be taken as the one expressed in the latter:

TEXT 40: FAKHR AL-DĪN AL-RĀZĪ, *SHARḤ KITĀB AL-ISHĀRĀT WA L-TANBĪHĀT* (NAJAFZĀDE), I.3.7, 154.12–155.6

Know that the words of the Shaykh [Avicenna] “it is said ‘Zayd [is] a writer’ where it should be said ‘Zayd, he [is] a writer’” invite further reflection. For “writer” is one of the derived names, and we just explained that their likes are predicated [by themselves] and that they do not need another utterance signifying that [they are being predicated]. [Avicenna] was explicit about that in the *Eastern Philosophy*, where he said: “As for the case when the proposition is not ternary, i.e., when it is only binary, the copula is not mentioned in it and [one] is able to dispense with it, because its predicate is a statement-word or a derived name. It then includes the mentioned nexus on account of the language, or else it is not mentioned for reasons of economy of expression. And the negational particle attaches only to the predicate.”

Here we have an explanation of derived names as including the signification of the nexus; perhaps [Avicenna] was being indulgent in this book [i.e., the *Ishārāt*], because



his goal here is to teach the metathetic and positive expressions, not to verify the distinction between binary and ternary propositions. What he says in detail is what he means, what he says in summary is not. In any case, the truth is as we presented it.

Rāzī takes issue with Avicenna’s use of the copula “*huwa*” (he), which Rāzī thinks must not be used when the predicate is a verb or a derived name. Strangely, in the later *Lubāb* he himself uses the copula “*huwa*” with a derived name (*baṣīr*, i.e., sighted/seeing) in his examples. But that might be charitably read in the same way that Rāzī read Avicenna: his considered opinion was what he said when discussing the point in detail.<sup>46</sup> In the *Mulakhkhaṣ*, which was completed in 579/1183–1184 before the commentary on the *Ishārāt*, the criticism is also voiced. In the commentary on the *Ishārāt* itself, just before the passage quoted earlier, Rāzī had put the matter thus:

TEXT 41: FAKHR AL-DĪN AL-RĀZĪ, *SHARḤ KITĀB AL-ISHĀRĀT WA L-TANBĪHĀT* (NAJAFZĀDE), I.3.7, 152.10–153.4

[Avicenna] said: And you must know [ . . . ] the second case, [if] the copula precedes the [negative particle], it makes [the negative particle] a part of the predicate.

I say: Every statement inevitably consists of something that it makes a statement about and something else with which it makes a statement, and of a nexus of one of the two to the other, either affirmatively or negatively. The utterance signifying that which the statement is about is called the subject, the one signifying that with which the statement is made [is called] the predicate. You should know that predicates fall under one of two types. Some contain the signification of the copula, and some are not like that. The first are the statement-words and the derived names, for we explained that derived names and statement-words have in common that they signify meanings accruing to indeterminate subjects. “Writer,” for example, signifies not only “writing,” but also that writing accrues to some [one] thing, and that [signification] is the nexus obtaining between “writing” and its subject.

Since the nexus is one of the things internal to the concepts of derived names and statement-words, surely there is no need to mention a simple utterance signifying this nexus. Rather, they are predicated by themselves without the need to mention a simple utterance signifying that nexus. If it is made explicit by mentioning the utterance signifying that nexus, then this would be a useless repetition.

This is, in essence, Rāzī’s challenge. It is not the case that a proposition—in the sense of an utterance with a truth-value—consists, when fully analyzed, of three items. We may note that for Rāzī, subject, predicate, and the copula are expressions. That about which judgment is passed, that with which judgment is passed, and the nexus, be it affirmative or negative, are the concepts signified by those expressions. While for Rāzī it is correct to say that the nexus is a concept distinct from the meanings of both subject and predicate, this does not mean that a third utterance is needed to signify it. Rather, the majority of predicates is such that what they signify includes as part of their essence (*dhāt*) the signification of the

nexus. To someone insisting that the number of concepts signified by a proposition should be mirrored by the number of expressions, he counters:

TEXT 42: FAKHR AL-DĪN AL-RĀZĪ, *SHARḤ KITĀB AL-ISHĀRĀT WA L-TANBĪHĀT* (NAJAFZĀDE), I.3.7, 153.5–154.2

If it is objected that when we say “Man is-a-writer” (*al-insānu kātibun*), then *man* is a concept distinct from the concept *writer*. When two concepts are distinct, inevitably there must be a connecting relation (*intisāb*) of one to the other that is additional to the two concepts, and that requires a third utterance—then we respond as follows.

First, this is absurd as far as the statement-word is concerned, for it is predicated all by itself, even though what you mentioned does apply [i.e., that the nexus is a concept additional to the concepts signified by subject and predicate]. And also, because the nexus, even if the concept of it is distinct from the concept of the subject, is connected to it by its essence. And likewise, whatever [meaning] comprises the nexus as internal to its concept is connected to the subject by its essence.

When, however, predicates are non-derived names, there must be an utterance signifying that nexus. For that nexus, since it is a third meaning distinct from both subject and predicate, surely must be singled out by an utterance signifying it, be it explicitly or implicitly.

Hence it is clear that there are propositions which are binary by nature and do not permit of being turned into ternary ones, and others that are ternary and do not permit of being turned into binary ones. The matter is not as superficial thinkers thought, namely, that binary propositions are those that do not mention the copula with an [additional] utterance, so that once [the copula] is made explicit they become ternary.

Some propositions are binary because their predicate includes the signification of the nexus. However, this does not apply to all predicates *qua* predicates, but depends on the type of concept that occurs in the predicate-place. If the predicate is signified by a statement-word or a derived name, it will be a concept such that it is never a substance. If the predicate is signified by a non-derived name, it does not by its own essence connect to the subject but needs the nexus to be signified by a copula. For Rāzī, such propositions consist—when fully analyzed—of three items.

But only those do, and hence there is no liberty in mentioning or leaving implicit the copula, as Avicenna had supposed. In his later commentary on *ʿUyūn al-ḥikma* Rāzī criticizes Avicenna from yet another angle:

TEXT 43: FAKHR AL-DĪN AL-RĀZĪ, *SHARḤ ʿUYŪN AL-ḤIKMA* (AL-SAQQĀ), I.125.1–18

There are questions here. The first question is this. Every affirmative proposition has three parts: the essence of the subject, the essence of the predicate, and the specific nexus obtaining between them. One of them is a subject for the other, and that other [thing] is a predicate for the former. The proof for this is that when we say “The sky [is a] sphere,” then what is understood from “sky” is one thing, and what is understood from “sphere” is another. What is understood from the sky being described as a sphere is a third thing. The proof: It is perfectly possible to conceive of

the sky and the quiddity of a sphere without knowing that the sky is described as a sphere. And what is known is distinct from what is not known.

Further: What is affirmed when one affirms that the sky is a sphere is the affirmation of the nexus. And what is denied when it is denied that the sky is a sphere is likewise the nexus. [For the sake of argument, assume] it is affirmed: then [it is affirmed that] this nexus is a third concept distinct from the essence of the subject and the essence of the predicate. Now, when we say “the body has blackness,” the body is the subject, and blackness is in reality its predicate. And “has” is the description signifying this specific nexus. However, the Shaykh [Avicenna] said that blackness was not a predicate, but that the predicate was [in fact] “black.”

What Rāzī adds in this passage is that contrary to what Avicenna said, blackness (*sawād*), which is treated as a non-derived name, may well be a predicate, and then just needs a copula to signify the nexus (“*lahu*,” i.e., “to it/it has” in Rāzī’s example). Rāzī’s argument here is roughly the same as in the commentary on the *Ishārāt*. In both commentaries Rāzī advances what I shall call the “Repetition Argument”:

TEXT 44: FAKHR AL-DĪN AL-RĀZĪ, *SHARḤ ‘UYŪN AL-ḤIKMA* (AL-SAQQA), I.125.18–25

In my opinion this is weak. For here we have an essence present in the soul and an attribute present in that essence, and that essence is described by this attribute—the subject is just this: the aptitude for being described. As for the attribute: it is nothing other than “blackness,” or “whiteness.”

Now that you know this, we may say that if what is meant by “predicate” is what we just said, then the nexus is external to the thing named, and in this case a third expression is needed to signify the nexus. If, however, what is meant by “predicate” is what the Shaykh said, then the specific nexus is one of two parts of the meaning that is understood from “predicate.” If the matter is thus, then it would be impossible to single out the nexus by [employing] an additional third expression. For it is not correct to say “Zayd he [is] a writer,” because the expression “writer” by containment signifies that nexus. Hence, singling it out by [employing] another expression is mere repetition.

For Rāzī, there are two types of predicates. First, it may be a concept to which the nexus is external (which is signified by non-derived names), and in that case a copula is needed to signify that nexus. Second, the predicate may be what Avicenna referred to in his *Eastern Philosophy*, namely, a concept that contains the nexus. In that case it is impossible to signify the nexus by an additional expression (as Avicenna thought you could). If you tried to signify the nexus by a copula in the second case, that would amount to a repetition, because the nexus would be signified twice.

### *The Logic of al-Mulakhkhaṣ*

In the *Mulakhkhaṣ*, even though broadly following the Avicennan format, much of Rāzī’s presentation of logic, both on a general level and on a level of detail, is still idiosyncratic. It is noteworthy that the Repetition Argument already features in this relatively early work, completed over twenty years before the commentary on *‘Uyūn al-ḥikma*. The chapter on simple categorical propositions in the *Mulakhkhaṣ*

provides a more comprehensive picture of the problem of predication, suggesting why Rāzī might have insisted on the Repetition Argument. He divides the issue of the copula in two. First, one can ask about the elements of propositions either regarding their form or regarding their matter. Rāzī equates the form of a proposition with the nexus. And with regard to the nexus, we may inquire either about the utterance signifying it, or about the meaning itself.

TEXT 45: FAKHR AL-DĪN AL-RĀZĪ, *MANṬIQ AL-MULAKHKHAṢ* (QARĀMALIKĪ), I.129.1–130.5

As for the elements [of the proposition], they are either its form, and this is the nexus which is between its two terms, or its matter, and this is the subject and the predicate. As for the form, the investigation is concerned either with its [i.e., the nexus's] meaning, or with the utterance signifying it.

[A] Concerning the meaning, there are two investigations.

First: In every proposition there are no doubt the essence of the subject, the essence of the predicate and the nexus between the two, which is distinct from them because of the possibility to conceive each of the two without conceiving [the nexus] or conceiving [the nexus] without conceiving the specificity of each of the two [i.e., of predicate and subject]. And [also,] because the nexus between the two things is posterior to them, and what is posterior is distinct from what is prior.

Second: The nexus of one of the two to the other is not [the same as] the nexus of the other to it, because the nexus of one of the two to the other is the nexus of being-a-subject and of being-a-locus, while the nexus of the other to the first is the nexus of being-a-description and of being-a-state. One of the two [nexus] may be necessary while the other is contingent. That's why propositions do not preserve their modalities when they are converted. But the nexus which is part of the quiddity of the proposition is the aptitude of the essence of the subject for being described by the predicate, while the other [nexus, i.e., that of predicate-hood] is an extrinsic implicate [of the quiddity of the proposition].

As in the earlier passages, Rāzī makes clear that the nexus is distinct from the meaning of subject and predicate. Here he states that there are in fact two nexus, because the modal qualities may differ depending on which term is in the predicate-position. Only the subject-nexus is part of the quiddity of the proposition. Concerning the investigation of the utterance, he continues:

TEXT 46: FAKHR AL-DĪN AL-RĀZĪ, *MANṬIQ AL-MULAKHKHAṢ* (QARĀMALIKĪ), I.130.6–132.10

[B] Concerning the utterance, there are five investigations.

First: If the nexus is signified by containment through the predicate-name, as is the case with derived names and statement-words, on pain of repetition it is not permissible to single it out by correspondence [between simple utterances and simple concepts signified]. This proposition is by nature binary on the level of utterances.

Second: The natural place for the copula is in the middle between subject and predicate because the nexus is between the two. Hence, the utterance signifying it inevitably should be between them, [too].

Third: Every proposition is in itself quaternary, because the copula by itself inevitably has a specific quality—either necessity or non-necessity. This may or may not be the case for the utterance.

Fourth: When we say “Man is necessary-that-it-is-an-animal” it is possible that necessity is a predicate, and what comes after [“necessary”] is mentioned so that [the predicate] is further specified, because necessity is a relational matter (*amr nisbī*) and it is not possible to mention it in its specificity, except by mentioning that to which it is related (*mansūb*); or because it is a part of it; or, finally, because it is external to it. On the first and second account the proposition is not modalized on the level of language, but rather it is absolute. It is only modalized on the third account. [ . . . ]

Fifth: Even though the quantifier is, as will soon be explained, God willing, a part of the proposition when it is heard, it is however not a part of the proposition when it is intellected. [The quantifier] is nothing but an utterance signifying the quantity for which the predicate subsists, and that quantity is the same as the subject. But in [extramental] reality the quantifier has no expression distinct from the subject—in contradistinction to the copula and the modality. That’s why they classified propositions—because of [the quantifier]—as quinary, just as they classified them—because of the copula and the modality—into binary, ternary and quaternary.

Rāzī here both provides a new conceptual framework to think about propositions as hylomorphic compounds in which the meanings of subject and predicate are the material parts, and the nexus the formal part. He closely ties modality to the discussion of the nexus signified by the copula. A proposition for Rāzī is something to the utterer of which it is said that she speaks truly or falsely. But a proposition may be intellected or heard, and Rāzī presupposes a certain isomorphism between the two. When intellected, a proposition consists of the meaning of the subject, the meaning of the predicate, and a nexus that is a concept distinct from these two.

The nexus has an intrinsic modal quality, no matter whether it is mentioned in a spoken proposition or not. Given that the modal quality of the nexus may change when a proposition is converted, Rāzī insists that there are two distinct nexus between any two terms depending on which of them is assumed to be the predicate. Both the nexus and its modal quality find an expression in extramental reality. The reason why Rāzī insists on the Repetition Argument is that on his account some meanings of predicates (those signified by verbs and derived names) are such that they include the meaning of a copula (i.e., the nexus). The nexus is however still distinct from the notion primarily signified by the predicate. Khūnajī responded to most of these points.

#### AFḌAL AL-DĪN AL-KHŪNAJĪ: A CHAPTER ON THE COPULA

Afḍal al-Dīn Muḥammad b. Nāmāwar b. ‘Abd al-Malik al-Khūnajī was born in 590/1194 in Khūnaj, a town between the cities of Zanjān and Marāgha in the province of Azerbaijan.<sup>47</sup> We know little about his upbringing and studies. The chronicler and polymath Bar Hebraeus (d. 685/1286) mentioned him as one of Fakhr al-Dīn al-Rāzī’s students. This is however with justification doubted by

El-Rouayheb.<sup>48</sup> We know that Afḍal al-Dīn was in Mecca in 624/1226–1227, where he wrote *al-Jumal* (The Sentences). A couple of years later, in 632/1234–1235, he was in Cairo, where Ibn Abī Uṣaybi‘a, the famous author of the biographies of philosophers and physicians, was among his students.<sup>49</sup> When the Ayyūbid ruler of Egypt al-Malik al-Kāmil (reg. 615/1218–635/1238) died, Afḍal al-Dīn was forced to move to Seljuk Anatolia, where he served as a judge. After the Mongol invasions of 641/1243 he returned to Cairo where he was appointed chief judge by al-Malik al-Ṣāliḥ (reg. 637/1240–647/1249) a year later and died there in 646/1248.

Khūnajī wrote three works on logic. As Ibn Khaldūn stated, *al-Jumal* is a very short (four leaves) handbook useful for students.<sup>50</sup> It was popular especially in North Africa, and Ibn Khaldūn likely studied logic with it himself. Naturally, given its brevity, Khūnajī does not engage in criticism in this work. He simply states that a proposition needs a nexus by which the predicate is true of the subject, either affirmatively or negatively, and that if the copula (*huwa/laysa huwa*) is mentioned, the proposition is called ternary, and if not, binary.<sup>51</sup> Further, he states that the nexus inevitably has a modal quality, i.e., necessity (*ḍarūra*) or lack thereof, or perpetuity (*dawām*) or lack thereof, which, when expressed by a simple utterance, makes the proposition quaternary.<sup>52</sup> It is noteworthy that he includes a section on the quantification of the predicate.<sup>53</sup> The second work, an intermediate length handbook titled *al-Mūjaz* (The Concise), has not yet been edited.<sup>54</sup> It elicited a commentary by Sirāj al-Dīn al-Urmawī (d. 682/1283), as well as by Fakhr al-Dīn b. Badī‘ al-Bandahī (d. 657/1258), and Sayf al-Dīn Dā’ūd b. ‘Īsā al-Baghdādī (d. 705/1305).<sup>55</sup> The third logical work, a summa titled *Kashf al-asrār ‘an ghawāmiḍ al-aḥkām* (Disclosing the Secrets of the Obscurities of Thoughts), is, as Ibn Khaldūn noted, very long and contains Khūnajī’s most in-depth confrontation with the positions of his predecessors.

### *The Kashf al-asrār and the Subject-Matter of Logic*

One of the most influential works of Arabic logic ever written, Khūnajī’s *Kashf al-asrār* was first edited in 2010 and remains to be thoroughly studied.<sup>56</sup> While the momentous importance of the work was appreciated by contemporary scholars and near-contemporaries like the historian Ibn Khaldūn, the later tradition grew increasingly oblivious of the origin of many of Khūnajī’s logical innovations, which came to be absorbed into the standard logical textbooks written in the 7th/13th and 8th/14th centuries.<sup>57</sup>

However, this substantial and self-standing work on logic (adding up to some four hundred pages in the printed edition, even though it remained unfinished) certainly stands out from the usual tripartite presentations of philosophy where the logic part serves as the *propaedeuticum* for the parts on metaphysics and physics. It is roughly structured after the logic of the *Ishārāt* and was likely written between 624/1227 and 634/1237, after *al-Jumal* (composed 624/1226–1227 in Mecca) and probably before *al-Mūjaz*.<sup>58</sup> In the words of Kātibī, who wrote a monumental commentary on it, Khūnajī presents in the *Kashf al-asrār*

noble investigations, subtle rules and general principles that are absent from the works of people of the discipline, especially in modality propositions, their contradictories, converses and contrapositions, and the modal and hypothetical syllogisms. He uniquely presented outstanding innovations and truthful discoveries that were not indicated by people before him.<sup>59</sup>

What Kātibī refers to here are some of the major innovations that were to shape Arabic logic for centuries to come.<sup>60</sup> Another point on which Khūnājī in the preliminaries of the *Kashf al-asrār* presents a radically new idea is his conception of the subject-matter of logic. For him, logic investigates not secondary intelligibles but the objects of conception and assent. Even though not paraded as a novelty by Khūnājī himself, this conception of the subject-matter of logic was perceived by later logicians, like Kātibī and Khūnājī's student Ibn Wāsil al-Ḥamawī (d. 697/1298) for example, as fundamentally distinct from and decidedly superior to the Avicennan position.<sup>61</sup>

On this conception, logic as a science in the typical Aristotelian fashion investigates the *per se* accidents (*a' rād dhātiyya*; here: *awāriḍ lāḥiqa limā huwa huwa*) of its subject-matter (8.13–9.2).<sup>62</sup> Yet whereas for Avicenna logic investigates the *per se* accidents of its subject-matter, that is, of secondary intelligibles such as "being-a-genus" or "being-a-predicate," insofar as they lead from the known to the unknown, Khūnājī considers the subject-matter of logic to be more general than secondary intelligibles. This is precisely because for him it is not only the *per se* accidents of secondary intelligibles that are relevant to logic, but also, in some cases, the *per se* accidents of primary intelligibles and, if Samarqandī's reading is correct, tertiary intelligibles.<sup>63</sup>

#### *Khūnājī's Criticism of Avicenna on the Statement-Word*

As far as the notion of the statement-word is concerned, Khūnājī closely engages with Avicenna's ruminations in the *Shifā'* and criticizes some of the points Avicenna had made there. After discussing the types of signification and the distinction between simple and compound utterances (10.12–14.14), Khūnājī introduces the types of simple utterances: name (*ism*), statement-word (*kalima*), and auxiliary (*adā*). He reproduces and explains the definitions of name and statement-word given in Avicenna's *al-Ibāra* (14.15–15.5).<sup>64</sup> Fully alive to the importance of Avicenna's addition to the definition of the statement-word, Khūnājī remarks:

As a last addition to the [definition of] the statement-word the Shaykh [Avicenna] claims that, even if not needed for precise specification, but nonetheless to fully circumscribe its real nature, [the statement-word] signifies a nexus to a subject. The statement-word needs this nexus no less than it needs a tense, for as long as there is no nexus, there will be no tense for the nexus. (15.5–8)<sup>65</sup>

Khūnājī then discusses Avicenna's considerations concerning the statement-word in Arabic as being different from Greek, and as being different from what Arabic



grammarians understand by “verb” (*fi l*). He reports three of the four issues raised by Avicenna, and summarizes:<sup>66</sup>

This is a synopsis of what Avicenna said. He further refines [the definition of] the proposition by declaring the past and present third-person conjugated verb forms to be statement-words (not propositions) and all remaining verb conjugations to be propositions (*kalām*). And he also judges the declined noun to be composite on account of the hidden inflectional pronouns signifying an additional meaning. (20.3–5)

With all of this Khūnājī emphatically disagrees:

TEXT 47: AFḌAL AL-DĪN AL-KHŪNAJĪ, *KASHF AL-ASRĀR ʿAN GHAWĀMID AL-AFKĀR* (EL-ROUAYHEB), 20.6–17

And we say that the matter is not like that for Arabic speakers, for “I walk” (*amshī*) or any of the other [inflected verb forms], are by themselves not propositions (*kalām*) susceptible to truth and falsehood. Rather, [these become propositions only] together with the noun concealed in them. [The grammarians call] this the agent pronoun. It is the expression “I” (*ana*) in “I walk” (*amshī*), and “you” (*anta*) and “we” (*nahnu*) in the other [examples]. What is heard is by itself not a proposition but a part of a proposition consisting of what is heard and the concealed noun, just as is the case with “he walks” (*yamshī*) which is a proposition (*kalām*) together with an explicit noun or else with an implicit pronoun for the third person, and that is the expression “he” (*huwa*).

And if it is said that even if the *hamza* is not a noun or a pronoun for the first-person agent, it is still a sign for this pronoun and has a signification in the context of the sentence necessitating a composition, then we say: so likewise for the *yā*! It has a certain signification because it is a sign for the third-person pronoun. Some of them stick to this position to the extent that they think that there is no statement-word in the Arabic language, and that present-tense statement-words are composed of two names or of a name and a letter/particle (*harf*) as their position requires—clinging to the idea that what comes after the letters [signaling] the present-tense is neither a past nor future-tense verb, but a name, and that every single one of the letters [signaling] the present-tense is either a name or a particle. Space does not allow for an extensive treatment of the issue, but whoever wants a thorough examination of it has the books on Arabic [grammar] at his disposal.

Khūnājī simply does not buy Avicenna’s arguments that first- and second-person inflected verbs are not statement-words, but complete propositions with a truth-value. His criticism cuts at the first juncture (1) so that neither (2), whether or not third-person inflected words would then also have to count as compound utterances and hence as propositions with a truth-value, nor (3), the same question in relation to derived names, can even arise. For Khūnājī, all these cases are structurally indistinguishable: none—by itself—counts as a proposition. Rather, such utterances only implicitly contain personal pronouns whose reference needs to be fixed by context—that’s no different for an implied “you” or “he.” To ostensibly fix

that reference, the implied pronouns need to be made explicit. But then they are no longer part of the simple utterance.

*Khūnajī's Criticism of Rāzī concerning the Copula*

Khūnajī is the first to dedicate a chapter specifically to the copula in a substantial work on logic in Arabic (75.1–77.11). In it he presents largely traditional material, but also explicitly criticizes Rāzī. He begins by stating the common ground that both Avicenna and Rāzī shared. A proposition consists of three things: the meaning of the subject, the meaning of the predicate, and a nexus (*nisba*) between them (75.2–3). As the nexus is a conception that is irreducible to subject or predicate (we can conceive of them without being so combined), it is only right to express this fact also on the level of language; and that which signifies said nexus on the level of language is called the copula (*rābiʿa*) (74.3–6). But some languages, like Arabic, do not customarily use a copula. Hence, if the copula is expressed, the proposition is called ternary, and if it is implicit, binary (75.6–9). He continues: The copula is an auxiliary and may be in the form of a statement-word (hyparctic), in which case it is temporal, or in the form of a naming-word (i.e., pronoun: *faṣl/ʿimād*), in which case it is atemporal (75.10–13). Whereas Greek always explicitly expresses a temporal copula, Arabic does so only in conditionals, not in categoricals; Persian only uses ternary propositions, with either additional temporal or non-temporal copulae, or else with an inflection at the end of the predicate (75.14–76.2). So far, nothing of this was controversial in the tradition. However, the remainder of the chapter has a more critical tone.

Khūnajī cites Avicenna from the *Shifāʾ* where he distinguishes between binary, incomplete ternary, and complete ternary propositions, depending on whether and what kind of copula is expressed (76.3–13).<sup>67</sup> Only non-temporal copulae signify a nexus to a determinate subject (*mushār ilayhi*: indexically; 76.9). Statement-words and derived names signify a nexus, but only to an indeterminate subject (76.6–7). Hence, Avicenna classified propositions into complete ternary (expressing a copula that signifies a nexus to a determinate subject), incomplete ternary (with a copula implying an indeterminate subject), and binary (where no copula is expressed) (76.7–12). This, according to Khūnajī, is why in the *Ishārāt* the non-temporal copula is needed in propositions like "Zayd[, he] is a writer" to determine the subject (76.13–16).<sup>68</sup>

However, as we have seen, Avicenna in the *Easterners* had also said that the statement-word may contain the signification of the nexus, including that to a determinate subject (76.16–77.2).<sup>69</sup> Khūnajī credits Rāzī for resolving doubts about the consistency between Avicenna's *Ishārāt* and the *Easterners*. In his commentary on the *Ishārāt* Rāzī said that Avicenna here might have said that "*huwa*" is needed, but in fact this might just be due to carelessness or negligence, or else the

exigencies of the context at hand, and that what he really meant is what he says in *al-Ḥikma al-mashriqiyya*.<sup>70</sup> Yet Khūnajī criticizes Rāzī's position:

TEXT 48: AFḌAL AL-DĪN AL-KHŪNAJĪ, *KASHF AL-ASRĀR ʿAN GHAWĀMID AL-AFKĀR* (EL-ROUAYHEB), 77.3–7

The Imām [al-Rāzī] in his books maintains that if the predicate of the proposition is a statement-word or a derived name, then it is true of [the proposition] that it is binary, because of the nexus being signified by containment. Consequently, it is not permissible—on pain of repetition—to single out [the nexus] by mentioning [the copula]. If [the predicate] is a non-derived name, then it is true of [the proposition] that it is ternary. This goes against what we transmitted from the Shaykh [Avicenna], so how can he [Rāzī] acknowledge in the commentary on the *Ishārāt* that the statement-word only signifies a nexus to an indeterminate subject?

For Khūnajī, Rāzī is himself being incoherent here. Rāzī held that if the predicate is morphologically derived (an IM, or a verb), then the proposition is binary (*fī l-lafẓ bi-l-ṭabʿ*), because the signification of the nexus to the subject is contained in the predicate. As we have seen, in support of this, Rāzī had provided the Repetition Argument.<sup>71</sup> Khūnajī's critique is this:

TEXT 49: AFḌAL AL-DĪN AL-KHŪNAJĪ, *KASHF AL-ASRĀR ʿAN GHAWĀMID AL-AFKĀR* (EL-ROUAYHEB), 77.7–78.2

But from what is said—if we say “Zayd writes,” the expression “he” is implied at the end of the statement-word, being concealed in it according to the Arab grammarians, but if we also put it in the middle, we would say “Zayd, he writes, he” (*Zayd huwa yaktub huwa*), and that is a repetition—none of this follows. For the expression “he” which is at the end of the statement-word is not a copula for [the grammarians], but an agent noun (*ism fāʿil*), whereas the middle one is a copula, and each of the two is unlike the other. Therefore, [the grammarians] do not doubt that the last one is a name (*ism*), and some of them maintain that the other is an auxiliary.

We find in the Qurʾān the explicit statement of a copula even though the predicate contains the nexus, like the words of Him Exalted “You are the All-Observer” (*kunta anta al-raqīb*) [Q5:117], recited with the accusative ending. But it is possible that the statement-word alone is not a predicate for them, but rather the sentence (*jumla*) obtaining through it and the agent noun (*ism fāʿil*) coming after it. The statement-word, even if alone it does not signify a determinate subject, together with the silent pronoun that refers back to the preceding [grammatical] subject (*al-mubtadaʿ*), signifies a determinate subject (*mawḍūʿ*). But generally speaking, the controversy about this is ultimately a linguistic inquiry that is outside the scope of the logician. It is only incumbent upon the logician that he makes it obligatory to mention whatever signifies a determinate subject. If the Arabic statement-word is assumed to do this, then it is not necessary to mention the copula along with it. If it signifies [only] an indeterminate [subject], then it is necessary.

The Repetition Argument does not hold, for what statement-words or derived names signify by containment is different from what is signified by a non-temporal

copula. The Qur'ānic verse "*Kunta anta al-raqība*" is cited to invalidate the Repetition Argument. Here we have both a temporal copula in the form of a second-person singular hyarctic verb *and* an accusative case-ending inflecting the predicate to signify, Khūnājī speculates, the nexus to an indeterminate subject in this way. If the copula "*anta*" is here mentioned, then it must be that leaving it out would not sufficiently specify the subject of the nexus implied by the inflection. The subject becomes specified only by the inflection understood as a hidden pronoun referring back to the grammatical subject. But that is ultimately a matter for grammarians to resolve. Khūnājī's verdict is that the logician has to make sure the determinate subject is signified, whatever that may require.

Two brief rejoinders are annexed to the chapter that are both also found in Rāzī. First, temporal copulae may be used to signify non-temporal nexus and *vice versa* (78.3–4). Second, the nexus of a subject to its predicate is not the same as that of the predicate to the subject, for similar reasons that Rāzī had adduced. The nexus of the predicate to the subject may have different qualities in terms of affirmation/negation and a different modality—otherwise a proposition would be indistinguishable from its converse (78.5–11).

The latter point came to be extensively discussed by later logicians, especially by Kātībī and Urmawī, as we shall see in the next chapter. The problem may be seen as arising from the "interchangeability thesis." Post-Avicennan logicians noticed that there was a fundamental problem with assuming that it is possible to take two terms and switch them around between subject- and predicate-place. One of the reasons they became aware of the problem was that when places are switched, the modal quality of the nexus may no longer be the same. Some logicians in the later tradition thus distinguished four different nexus by which two terms may be connected.

## CONCLUSIONS

With Rāzī and Khūnājī, the first two of Ibn Khaldūn's new logicians, Arabic logic had begun to emancipate itself from its Aristotelian roots. This happened not only in the sense that the Aristotelian text was no longer the point of reference (this development had begun with Avicenna himself), but also in the sense that Avicennan logic as the new point of reference was being approached with a critical spirit aimed not at mere polemics, but rather at ameliorating the logical system as a whole, scrutinizing argument for argument.

The revisionist Avicennans approached Avicenna in a similar spirit to the one Avicenna used to approach Aristotle. While Avicenna, especially in his later works, had not given much attention to the copula, Rāzī, by criticizing Avicenna's seemingly contradicting remarks in the *Ishārāt* and *Easterners*, made the copula central again to discussions of predication, of the parts of the proposition, and of issues with modality and conversion.

Rāzī conceptualized the nexus between the meanings of subject and predicate as the form of a proposition and not a material part. His Repetition Argument

claims that there are linguistic items that only occur as predicates, signifying at once two distinct concepts, i.e., the meaning they have *and* the distinct concept of a nexus to a subject, and hence must not be used with a copula in categorical statements.

Khūnajī, who had reconceptualized the Avicennan subject-matter of logic, just as Avicenna had done with Fārābī's, making it an independent science with a larger scope, criticized Avicenna's idea that, in Arabic, some inflected verbs are not statement-words but propositions. However, concerning Rāzī's Repetition Argument, Khūnajī insisted that there was a distinction to be made between the meaning of the copula signifying a nexus to a determinate subject and the meaning included in statement-words and derived names that implies a hidden pronoun and thus only signifies a nexus to an indeterminate subject.