Al-ʿAllāma al-Ḥillī (d. 1325) and the Early Reception of Kātibī's *Shamsīya*:
Notes towards a study of the dynamics of post-Avicennan logical commentary[*]

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ABSTRACT

Al-Risāla al-Shamsīya fī l-qawāʿid al-manṭiqīya by Najm al-Dīn al-Kātibī (d. 1277) is one of the most widely-read textbooks on logic ever written. Its first readers, however, were less enthusiastic about it than later generations proved to be. In the earliest commentary written on the *Shamsīya*, al-ʿAllāma al-Ḥillī (d. 1325) expressed serious reservations about a number of Kātibī's decisions, decisions which developed ideas first put forward by Fakhr al-Dīn al-Rāzī (d. 1210). In the following article, I examine how the commentary Ḥillī wrote on

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the *Shamsīya*, *al-Qawāʿid al-jalīya fī sharḥ al-Risāla al-Shamsīya*, fits in with his other works on logic, and how it responds to Kātibī's logical program in general and to the syllogistic in particular. When set against the preceding two centuries of commentary on Avicenna's *Kitāb al-Ishārāt wa-l-tanbīhāt*, Ḥillī's response to the *Shamsīya* — and indeed Kātibī's writing of the *Shamsīya* itself — can be seen as seamlessly carrying forward a commentary tradition in which Rāzī and and Naṣīr al-Dīn al-Ṭūsī (d. 1274) figure prominently. The first appendix to the article examines the transformation of a lemma in the *Ishārāt* into the corresponding lemma in the *Shamsīya* through 150 years of commentatorial debate; the second appendix presents translations of a number of texts on syllogistic from *al-Qawāʿid al-jalīya*.

Some time in the 1270s, probably in Marāgha, Ḥasan b. Yūsuf b. al-Muṭahhar al-Ḥillī, generally known as al-ʿAllāma al-Ḥillī (d. 1325), produced the first in a long line of commentaries on a short logic textbook by Najm al-Dīn al-Kātibī (d. 1277). The textbook, *al-Risāla al-Shamsīya fī l-qawāʿid al-manṭiqīya* (*The Epistle for Shams al-Dīn on the Rules of Logic*, henceforth *Shamsīya*),[1] was to go on to achieve staggering success: by the mid-fourteenth century it had become the standard text for teaching logic throughout the realms of Islam. Of the crowd of commentaries and super-commentaries written on the *Shamsīya* since Ḥillī's first effort, it is above all the one written by his student, Quṭb al-Dīn al-Rāzī al-Taḥtānī (d. 1365), *Taḥrīr al-qawāʿid al-manṭiqīya fī sharḥ al-Risāla al-Shamsīya* (*Redaction of the Rules of Logic in Commentary on the Epistle for Shams al-Dīn*, henceforth *Taḥrīr*),[2] that came to be the commentary most often consulted by later generations of logic teachers. But Ḥillī's *al-Qawāʿid al-jalīya fī sharḥ al-Risāla al-Shamsīya* (*Clear Rules in Commentary on the Epistle for Shams al-Dīn*, henceforth *Qawāʿid*)[3] was far from superseded by Taḥtānī's *Taḥrīr*, and — as I hope to show — has much to offer the historian of Arabic logic.

It is doubtful that Ḥillī would have been pleased with the *Shamsīya's* ultimate success, not at any rate when he was a young man writing his commentary on it. He saw it as infected with the incorrect logical doctrines common among those he referred to as the followers of Fakhr al-Dīn al-Rāzī (d. 1210); in his commentary he flagged for his readers what he thought were the most pernicious of these incorrect doctrines. As will become clear, Ḥillī was

1. Najm al-Dīn al-Kātibī, *al-Risāla al-Shamsīya fī l-qawāʿid al-manṭiqīya.* Given as lemmata in al-ʿAllāma al-Ḥillī, *al-Qawāʿid al-jalīya fī sharḥ al-Risāla al-Shamsīya*, ed. Fāris Tabrīziyān (Qum 2012).

2. Muḥammad ibn Muḥammad Quṭb al-Dīn al-Taḥtānī, *Taḥrīr al-qawāʿid al-manṭiqīya fī sharḥ al-Risāla al-Shamsīya* (ed. Cairo 1948); contains both the *Shamsīya* and the *Taḥrīr*.

3. al-ʿAllāma al-Ḥillī, *al-Qawāʿid al-jalīya fī sharḥ al-Risāla al-Shamsīya*, ed. by Fāris Tabrīziyān (Qum 2012).

hoping to compel upon his readers a pre-Rāzian vision of the discipline. But for all his instinctive resistance to the *Shamsīya*, Ḥillī was a restrained and helpful commentator. To the extent that I can claim to understand what Kātibī is doing in the *Shamsīya*, I have been guided more by Ḥillī than by anyone else.

There are, then, two good reasons to study Ḥillī's *Qawāʿid* aside from its exemplary clarity in explaining Kātibī's compressed exposition in the *Shamsīya*. First, it provides details of an important substantive point at issue between those who worked with the logical insights of Fakhr al-Dīn al-Rāzī and those who rejected them, above all, Naṣīr al-Dīn al-Ṭūsī (d. 1274) and the young Ḥillī himself. Secondly — and especially when it is set in the context of immediately preceding logical debates —, it provides us with an interesting perspective on the dynamics of the post-Avicennan tradition of philosophical commentary in the late thirteenth century.

What follows is a short paper with two fairly lengthy appendices. I have written it in this way because the main points I hope to make are few in number and simple to outline. That said, they lie hidden in the texts behind a thicket of technical detail. I would be sad if that technicality drove away those who are interested in matters to do with Ḥillī's output and intellectual development, or in broader questions to do with post-Avicennan commentary. I have therefore tried to quarantine the parts of the study which deal with these matters so that the reader will not have to wade through the rebarbative terms of syllogistic art to follow the storyline. For that hardy band who are only really happy knee-deep in the aforementioned technicalities, however, the appendices should provide some joy. The first appendix charts the development from Avicenna's way of reading the subject term of a modal proposition to the readings which bothered Ḥillī so much; this is perhaps the most

important single substantive development which determined the transformation of the logic section of Avicenna's *Kitāb al-Ishārāt wa-l-tanbīhāt* (*The Book of Pointers and Reminders*; henceforth *Ishārāt*)[4] into the *Shamsīya*. The second appendix presents translations of passages from Ḥillī in which he set out his position on the central problem he disputed with the Rāzians; read alongside the texts in the first appendix, they show how continuous commentaries on the *Ishārāt* are with, first, the formulation of cardinal passages in the *Shamsīya* and, secondly, the commentaries determining the early reception of the *Shamsīya*. These translations are also meant to serve as a contribution to the growing dossier of post-Avicennan discussion of the modal syllogistic.

ḤILLĪ'S WORK ON LOGIC

Al-ʿAllāma al-Ḥillī was born in 1250 to a scholarly family of Imāmī Shiʿites in Ḥilla.[5] He met Ṭūsī while still a child, and probably — though this is disputed — went to Marāgha to study with him in the late 1260s or the 1270s. Once there, he also studied with Kātibī. In fact, we may speculate that Ḥillī got most of his formal education in logic from Kātibī, reading as he did not only Kātibī's own works but also Kātibī's commentaries on what were to become classic texts by Rāzī and Afḍal al-Dīn al-Khūnajī (d. 1248). It is likely that he also studied

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4. Avicenna, *Kitāb al-Ishārāt wa-l-tanbīhāt*, given as lemmata in Naṣīr al-Dīn al-Ṭūsī, *Ḥall mushkilāt al-Ishārāt*, 2nd ed. by Sulaymān Dunyā (Cairo: Dār al-Maʿārif, 1971).

5. Much in this section depends on Sabine Schmidtke, *The Theology of al-ʿAllāma al-Ḥillī (d. 726/1325)* (Berlin: Klaus Schwartz, 1991). I draw, specifically, on pages 17–19 and 56–61; where other sources are used, I note them in the footnotes. For the reasons given, I tend to date the *Qawāʿid* slightly earlier than Schmidtke does, *al-Jawhar al-naḍīd fī sharḥ Kitāb al-Tajrīd* (full reference in footnote 10 below) slightly later. For a more compact presentation of the bio-bibliographical material, see Sabine Schmidtke, *Encyclopaedia Iranica*, s.v. Ḥelli, Ḥasan b. Yusof b. Moṭahhar, accessed July 22nd, 2016: http://www.iranicaonline.org/articles/helli-hasan-b-yusof-b-motahhar

logic with Ṭūsī, presumably by way of reading *Ḥall mushkilāt al-Ishārāt* (*Solution to the Problems of Pointers*; henceforth *Ḥall*)[6] under his direction. It was the period of study under Ṭūsī which — as will become evident — determined his early views on the discipline. Ḥillī, in short, had studied with two of the greatest logicians of his time.

Ḥillī was the first person to write a commentary on the *Shamsīya*, so the *Qawāʿid* is our main source for understanding the early reception history of the *Shamsīya*. The earliest manuscript of the *Qawāʿid* dates to 1280. It's important to note that 1280 is when the manuscript was transcribed (*furigha min naskhihā*),[7] not when the work was finished, and — pace Schmidtke — I tend to think the *Qawāʿid* was written before 1277. I haven't found any passage of the commentary in which Ḥillī pays pious respects for Kātibī, who would have been three years dead at the execution of the manuscript. I think it unlikely that Ḥillī would have failed to show Kātibī the respect of the usual formulas, although I recognise that it is possible that sectarian considerations came into play, and kept Ḥillī silent at the mention of a Sunnī teacher.[8]

Although the *Qawāʿid* is the work of a man in his mid-twenties, it may not be Ḥillī's first work on logic. That honour perhaps belongs to the section he devoted to logic in *al-Asrār al-khafīya fī l-ʿulūm al-ʿaqlīya* (*Hidden Secrets in the Intellectual Sciences*; henceforth *Asrār*);[9] the

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6. Naṣīr al-Dīn al-Ṭūsī, *Ḥall mushkilāt al-Ishārāt*, 2nd ed. by Sulaymān Dunyā (Cairo: Dār al-Maʿārif, 1971).

7. *Qawāʿid* 415.pu; I acknowledge that *naskh* is equivocal, but I read it here as "transcription."

8. It would seem that polemics don't figure prominently in Ḥillī's work (though arguments from near silence are dangerous); see Tariq Al-Jamil, "Ibn Taymiyya and Ibn al-Muṭahhar al-Ḥillī: Shiʿi Polemics and the Struggle for Religious Authority in Medieval Islam," in *Ibn Taymiyya and His Times*, edited by Youssef Rapoport and Shahab Ahmed (Karachi: Oxford University Press, 2010), at 232.

9. al-ʿAllāma al-Ḥillī, *al-Asrār al-khafīya fī l-ʿulūm al-ʿaqlīya* (ed. Qum 2000).

section comes to over 200 pages in the Qum edition. Readers of the *Qawāʿid* are advised in its concluding passage to refer to the *Asrār* for a full treatment of all the objectionable doctrines advanced by Kātibī, so it is quite possible that Ḥillī had written it before 1277. It is however also possible, extrapolating from the writing practice of other scholars of the time, that Ḥillī was writing the two texts at once, or even merely planning the *Asrār* as he was writing the *Qawāʿid*. In any event, it is the *Asrār* where we find a full account of his own early views on logic along with a critique of Kātibī's doctrines. The reader could come away from the *Qawāʿid* thinking that Ḥillī was troubled by only a few things in the *Shamsīya*; the *Asrār* completely dispels that impression.

Ḥillī's commentary on Ṭūsī's *Tajrīd al-manṭiq* (*Abstract of Logic*), *al-Jawhar al-naḍīd fī sharḥ Kitāb al-Tajrīd* (*The Faceted Jewel in Commentary on the Book of Abstraction*; henceforth *Jawhar*)[10] is a somewhat later work which Schmidtke dates relatively early, to shortly after 1280. It seems to me that Ḥillī in the *Jawhar* is less full-throated in his support for Ṭūsī's positions than he is in the *Asrār*. So the modal inferences passionately defended in the *Qawāʿid* and the *Asrār* (for example, that a syllogism is productive with a possibility proposition as minor premise; see Appendix 2, *Qawāʿid* 356.5 et seq.) are set out with the tepid comment: "And the author — may God have mercy on him — chose Avicenna's doctrine with respect to their productivity."[11] Indeed, one of the passages in the *Jawhar*, on the consequents that can follow from a given antecedent, represents a complete about-face, and Ḥillī joins the followers of Fakhr al-Dīn (specifically, Khūnajī): "The later scholars rejected these two

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10. al-ʿAllāma al-Ḥillī, *al-Jawhar al-naḍīd fī sharḥ Kitāb al-Tajrīd* (ed. Qum 1984).

11. *Jawhar* 108.u–109.1: *wa-l-muṣannif raḥimahu llāhu khtāra madhhab abī ʿAlī ʿalā intājihi.* Cf. *Asrār* 126.12–129.1, Appendix 2: *Qawāʿid* 356.5 et seq.

inferences, saying that the proof the Ancients (*al-awāʾil*) had for them is weak, because a single antecedent may entail two contradictories... and this [doctrine of the later scholars] is the truth."[12] People can of course undergo a sudden change of heart, but more often than not it takes a few years to abandon views which have wide systemic ramification. On my reading, the *Jawhar* betrays a sense of shift in Ḥillī's commitment to the various positions defended in the *Qawāʿid*. In other words, he appears through these three works as a thoughtful logician prepared to change his views after due reflection. The shift in doctrine from *Qawāʿid* to *Jawhar*, however slight, is an important precursor to the positive attitude to the *Shamsīya* taken by his student, Taḥtānī.

Ḥillī wrote at least two other works on logic which are lost. One of these — *Kāshif al-astār fī sharḥ Kashf al-asrār* — was almost certainly a commentary on Khūnajī's advanced summa on logic, *Kashf al-asrār ʿan ghawāmiḍ al-afkār* (*The Disclosure of Secrets from the Obscurities of Thoughts*, henceforth *Kashf*).[13] In light of this work (and Ḥillī's later acceptance of Khūnajī's doctrine to do with impossible antecedents), it is noteworthy that the part of the *Qawāʿid* given over to pathologising Kātibī's most objectionable doctrine rehearses Khūnajī's views accurately (Appendix 2: *Qawāʿid* 300.9: *dhahaba ṣāḥibu l-kashf ilā...*); these points argue a close acquaintance with a difficult logician. Ḥillī also wrote commentaries on a number of comprehensive philosophical classics, including Avicenna's *Kitāb al-Ishārāt wa-l-tanbīhāt*, Suhrawardī's *Kitāb al-Talwīḥāt* and Rāzī's *al-Mulakhkhaṣ fī l-ḥikma*. Each of these

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12. Noted in Khaled El-Rouayheb, "Impossible Antecedents and Their Consequences: Some Thirteenth-Century Arabic Discussions," *History and Philosophy of Logic* 30 (2009): 211, ft. 10; see *Jawhar* 48.9–10. Cf. *Asrār* 98.18–u, and *Qawāʿid* 329.11–13: "yet on his rule which we mentioned earlier, namely, that a given thing entails two contradictories... none of these inferences goes through." I say a little more about this below.

13. Afḍal al-Dīn al-Khūnajī, *Kashf al-asrār ʿan ghawāmiḍ al-afkār*, ed. by Khaled El-Rouayheb (Tehran: Iranian Institute of Philosophy & Institute of Islamic Studies, Free University of Berlin, 2010).

commentaries must have devoted a substantial section to logic. Once we have studied all of Ḥillī's surviving works on logic, I suspect that we will hold him in higher regard as a logician than we tend to now.

Ḥillī's exegetical strategy in the *Qawāʿid*

The *Qawāʿid*, opening with a time-honoured topos, is presented as an explanation and expansion of a text found difficult by Kātibī's readers.

> When a group of those with whom I worked in research came across the *Shamsīya…* they laboured to understand its beneficial points, subtleties, and problematic questions (given its brevity and summary nature). They asked me to dictate a commentary to deal with these questions, and I agreed, notwithstanding my shortcomings in the discipline. (*Qawāʿid* 179.7–180.2)

And Ḥillī concludes the *Qawāʿid* saying,

> This is the end of what we wanted to set out in commentary on this epistle, having intended only to elucidate it; we have not turned to mention what we hold to be the truth, except in a few places. We have left that task to the *Kitāb al-Asrār [al-khafīya]*. (*Qawāʿid* 415.7–9)

In consequence, the *Qawāʿid* follows the text of the *Shamsīya.* (I should mention in passing that it does so in a way that differs slightly from the lemmatisation that became standard after Taḥtānī; this suggests that the lemmatisation is an artefact of the commentary tradition, and was not indicated by Kātibī himself.) Crucially, the *Qawāʿid* is not a thorough-going critique. None the less, it should be read in tandem with the *Asrār*, a book which often attacks Kātibī-style positions as it sets out its insights. The pairing with the *Asrār* changes the overall nature of the *Qawāʿid.*

At the opening of the *Qawāʿid*, Ḥillī speaks of Kātibī in what seem to be glowing terms, as "the most eminent of the later scholars" (*afḍal al-mutaʾakhkhirīn*; *Qawāʿid* 179.8). Comparison between the *Qawāʿid* and the *Asrār* shows however that "the later scholars" of the *Asrār* hold the same views as Kātibī and his fellow-travellers, a group referred to by Ḥillī from the beginning of the *Qawāʿid* as "Fakhr al-Dīn and his followers" (*Fakhr al-Dīn wa-atbāʿuhu*; *Qawāʿid* 183.4).[14]

This first intervention in the *Qawāʿid* comes at the first lemma of the *Shamsīya*. Kātibī presents the terms "conception" (*taṣawwur*) and "assent" (*taṣdīq*) and the doctrine that an assent is an aggregate of conceptions and a judgment (*ḥukm*). This provokes Ḥillī to write:

> This is in the usage of Fakhr al-Dīn and his followers, and it differs from the technical usage of the Ancients (*al-qudamāʾ*); for they considered the assent to be the judgment itself alone, and they considered the conception a condition for the assent. (*Qawāʿid* 183.4–5)

In the *Asrār*, however, Ḥillī doesn't merely dismiss the doctrine as a matter of technical usage, he goes on to call it an error (*wa-huwa khaṭaʾ*; *Asrār* 11.15–12.17, at 11.pu). Ḥillī has nailed his colours to the mast in the first twenty lines of the *Qawāʿid*, especially when we read it in light of the *Asrār*. Whatever else he is, he is not a Rāzian logician.[15]

So Ḥillī has only to mention Rāzī or his followers to prompt his readers to look for more information in the *Asrār*. Indeed, he can be even less explicit. When Kātibī says in the fifth

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14. "Later scholars" can be ambiguous in what it refers to; for example, note that at *Qawāʿid* 398.pu the later scholars are simply those who come after Aristotle. But more often than not it refers to the Rāzians.

15. Nor, at points — and in Ḥillī's view, to his credit —, is Kātibī: Rāzī claimed that every example of signification by correspondence entails signification by implication, but Kātibī in this instance rightly differed (*Qawāʿid* 198.24–199.1).

lemma that the subject matter of logic is conceptions and assents, Ḥillī seems to agree: "The subject of logic is of course conception and assent; but there is a discussion about this matter which it would not be appropriate to set out here" (*Qawāʿid* 190.13–14). In search of what the discussion involves, the reader of the *Qawāʿid* can turn to the *Asrār* to find that this doctrine, however it is disambiguated, is simply one more error of the later scholars (*wa-ẓanna l-mutaʾakhkhirūna anna mawḍūʿahu huwa l-taṣawwur wa-l-taṣdīq… wa-hādhā ayḍan khaṭaʾ*; *Asrār* 10.pu–11.14, at 10.pu and 11.3). Again, when Kātibī deals with the what-is-it question, he sets out a test for various stages of the answer ("part of what is said in answer to what is it, if it is said by correspondence, is called what occurs on the path to what something is…; if it is mentioned by containment, it is called intrinsic to the answer to what is it").[16] In the *Qawāʿid*, Ḥillī is mild in his reaction:

> This is the technical usage of Fakhr al-Dīn and his followers. The Ancients (*al-awāʾil*) considered that what occurs on the path to what something is the more general essential (*al-dhātī al-aʿamm*), and what is given as intrinisic to the answer to what is it the essential simpliciter. (*Qawāʿid* 234.3–5)

But — once again — the problem is not simply a matter of terminology. Ḥillī goes on in the *Asrār*:

> The later scholars claimed (*zaʿamū*) that what is intrinsic [to the answer to what is it] is that which is mentioned by containment of the parts (*bi-l-taḍammun mina l-ajzāʾ*), and that which occurs on the path [to what the thing is] (*al-wāqiʿ fī l-ṭarīq*) is that which is mentioned by correspondence (*bi-l-muṭābaqa*). This is a fruitless alteration (*taghyīr lā fāʾida fīhi*), given that "what is intrinsic" covers that which is mentioned whether by correspondence or containment, and that which occurs on the path [to what the thing

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16. Correspondence (*muṭābaqa*) and containment (*taḍammun*) are technical terms for different kinds of signification (cf. *Ishārāt* 1.6); the technical details aren't important for what I'm trying to illustrate, which is the procedure Ḥillī follows .

is] is proper to the more general essential, which is mentioned first and then restricted by the differentia. (*Asrār* 30.16–apu)

In short, the test Kātibī puts forward to sort terms into those mentioned as intrinsic to the answer to what is it, and those mentioned on the path to what the thing is, is wrong. Further, the test takes two terms of art (correspondence, containment), terms which ramify through every region of Avicenna's logic, and misrepresents their philosophical utility.

I don't intend to dwell on such express interventions one after another, though — in the hope of helping anyone who shoulders the worthy task of analysing the differences between the logical schools of Rāzī and Ṭūsī — here is a list of other passages where the *Qawāʿid* mentions the followers of Fakhr al-Dīn or the later scholars (excluding the material given in Appendix 2 below): whether correspondence entails implication (*Qawāʿid* 198.24 et seq.); how elements of a definition are properly ordered (*Qawāʿid* 239.1 et seq.); whether a proposition with a paronymous term as predicate needs a copula (*Qawāʿid* 247.12 et seq.); how to define contraposition properly (not actually a reference to the later scholars as such, but to Kātibī, who differs in this matter from the Ancients: *hādhā ʿalā raʾyi l-muṣannif wa-qad khālafa fīhi raʾya l-qudamāʾ*, *Qawāʿid* 315.10 et seq.); whether those who agree with Kātibī about impossible antecedents can offer proofs for transformations of conditionals (*Qawāʿid* 325.2–329.13); whether begging the question is a formal or a material fallacy (*Qawāʿid* 408.9–12).

We may draw two closely related conclusions from this overview of the *Qawāʿid*. First, by identifying the followers of Rāzī and then distancing himself from them, Ḥillī has managed to imply that by his time two distinct schools of logic had crystallised. Further, although there is no direct reference to Ṭūsī's *Ḥall*, many of the differences between Ṭūsī and Rāzī

which are set out in the *Ḥall* are reprised in the *Qawāʿid*.[17] Ḥillī sets himself up in a role relative to Kātibī which parallels the role Ṭūsī plays relative to Rāzī. The second conclusion is prompted by Ayman Shihadeh's recent discussion of the two genres of philosophical commentary, the exegetical and the aporetic (the first is devoted to exposition of the text, the second, to raising objections to it).[18] Ḥillī's *Qawāʿid* functions perfectly for the most part as an exegetical commentary, though whenever it mentions Rāzī and his followers, or the later scholars, we are given notice to bring in material from the *Asrār*. This extra material has the effect of transforming the *Qawāʿid* into an aporetic commentary, perhaps the earliest aporetic response by a follower of Ṭūsī to a logic treatise by a follower of Rāzī.

Ḥillī on Kātibī's syllogistic

Generally speaking, then, the *Qawāʿid* is fairly muted in its criticism of Kātibī's logic: it sounds a gentle warning from time to time, and the reader can seek "what we hold to be the truth" in the *Asrār*. There are however two series of passages in the *Qawāʿid* in which Ḥillī descends to detailed analysis and rejection of Kātibī's position. At these two points, the *Qawāʿid* is straightforwardly aporetic. The first is where Kātibī deals with hypothetical propositions. In what was then the recent past, Khūnajī had suggested that "two contradictory propositions may follow from the same impossible antecedent, and closely

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17. This is not the place to provide a list of the passages in the *Ḥall* at which Ṭūsī takes issue with Rāzī; but note among them *Ḥall* 193 (Rāzī on what is said in answer to what is it), 498 (on the analysis of begging the question; Ḥillī doesn't follow Ṭūsī here), and passim in paths 3, 4, 5 and 7 on the modal syllogistic.

18. Ayman Shihadeh, "al-Rāzī's commentary on Avicenna's *Pointers*: The confluence of exegesis and aporetics," draft paper, accessed June 22nd 2016, https://www.academia.edu/25579804: 11 et seq. It's not so much the distinction (one made fairly commonly) which is helpful, but the discussion of assessing the elastic boundary between the two.

related to this point... that if an antecedent implied a consequent, then it would do so no matter how it was strengthened"; Kātibī seemed to accept these claims.[19] According to Ḥillī, however, once these principles are accepted, it is no longer possible to construct proofs for the inference of — and here I limit myself to one of many possible examples — "always: either *A* is not *B* or *C* is *D*" from "always: if *A* is *B* then *C* is *D*." Kātibī puts this inference forward in the *Shamsīya* (lemma 87), "but on the rule which Kātibī mentioned in his other works... this will not go through" (*Qawāʿid* 327.13–14, 327.u). In short, Ḥillī denies that Kātibī is entitled to a number of the inferences he takes to be valid in the *Shamsīya*. I think that if these inferences are invalid, it would have considerable repercussions for Kātibī's larger system, in which case Ḥillī's attacks (*Qawāʿid* 325–329), if successful, are serious. None the less, I set this matter to one side to concentrate on the second and even more serious intervention in the *Qawāʿid*, concerning what amounts to the structuring principle for two thirds of the *Shamsīya*.

This second intervention is the series of passages (translated in Appendix 2) in which Ḥillī attacks Kātibī's syllogistic system. This attack needs to be read against the preceding century of commentatorial engagement with the *Ishārāt*, beginning with Rāzī's work in the late 1170s; this engagement transformed the *Ishārāt* into the *Shamsīya*. Appendix 1 illustrates what this claim means by taking two lemmata with far-reaching systemic consequences as examples; the appendix contains texts which represent the main issues in play and the development of doctrine through the commentators' engagement. Here I confine myself to speaking of matters in broad overview.

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19. El-Rouayheb, "Impossible Antecedents," 209, 211.

Rāzī argued that Avicenna should respect the distinction between alethic and temporal modalities (between, for example, "every *C* is necessarily *B*" and "every *C* is always *B*") (Appendix 1: Text 7); his fractious disciple Khūnajī made the stronger claim (Appendix 1: Text 11) that Avicenna actually did respect the distinction, though the way he expressed it in the *Shifāʾ* and the *Ishārāt* was often sloppy. There are good reasons for an Ashʿarite to find philosophical space for the distinction, but — and my observation is based on reading only a fraction of the relevant texts — the arguments for the distinction arose directly from consideration of Avicenna's larger philosophical system.[20]

Once in place, the distinction highlights — at least for Rāzī and his followers — problems in some inferences Avicenna defends in his syllogistic (Appendix 1: Texts 12 & 13; a summary is given after Text 7); these are inferences where Avicenna seems to slide from possibility to actuality. To resolve these problems, Rāzī modified the syllogistic by introducing two ways to read the subject term of the propositions used as premises in the syllogistic: the essentialist reading — the one Rāzī was more interested in — and the externalist reading (Appendix 1: Texts 8 & 10). In doing so, he produced two slightly different series of inferences, both with more cogent proofs than those Avicenna had offered. At the same time, Rāzī opened himself up for criticism, first, for failing in the essentialist reading to respect natural language (in the same way that Fārābī had failed to respect it) (Appendix 1: Text 13, referring to the reading attacked in Text 9); secondly, for providing a subject term in the externalist reading such that "every *C*" only really means some of the *C*s (Appendix 1: Text 6); and thirdly, for failing to allow in either reading for a proposition with an

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20. A preliminary exploration of the issues involved, with relevant texts, is given in Tony Street, "Faḫraddin al-Rāzī's Critique of Avicennan Logic," in *Logik und Theologie. Das Organon im arabischen und lateinischen Mittelalter*, ed. by Ulrich Rudolph and Dominik Perler (Leiden: Brill, 2005).

impossible subject term (as would be necessary, to take one example, if a Muslim were to try to derive unwelcome conclusions for a Zoroastrian opponent from a claim like "the co-creator exists") (Appendix 1: Text 18).

Perhaps in response to the last of these criticisms, Khūnajī modified the essentialist reading of the subject term so it could deal with impossible subjects. Propositions with such a modified subject term however conduce to a number of conclusions unpalatable for someone trained in classical syllogistic (Appendix 1: Text 14).[21] A number of logicians following on Khūnajī attempted to repair his essentialist reading (Appendix 1: Texts 15, 16 & 17), and it is the modified reading they jointly produce which Kātibī presents briefly (and then ignores) in the *Shamsīya*. Khūnajī also examined the syllogistic produced by the externalist reading Rāzī had legislated, and showed it to be a consistent system with cogent proofs. This is the system Kātibī explores — or, more exactly, adopts — in the *Shamsīya*.

To understand Ḥillī's counterattack against the Rāzians, two of his underlying assumptions should be made explicit. First, he never doubted that it was possible to provide a consistent interpretation of Avicenna's syllogistic by clearly restating the elements of Avicenna's original exposition. This was in contrast to Khūnajī, who had come to regard any attempt to provide an interpretation of Avicenna's syllogistic with a unified reading of the subject term as misdirected charity (Appendix 1: Text 12). Secondly, at least in the *Qawāʿid*, Ḥillī assumed that Rāzī's insistence on distinguishing alethic from temporal modalities does not merit any attention. Perhaps he thought Avicenna's proofs — properly understood — took the distinction into account and still went through, so that none of the inconsistencies

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21. Khūnajī's treatment of modal conversion is presented in translation in Tony Street, "Afḍal al-Dīn al-Khūnajī (d. 1248) on the Conversion of Modal Propositions," *Oriens* 42 (2014): 454–513.

which had worried Rāzī arise. Perhaps he thought the distinction baseless or inconsequential. It would be worth exploring whether he dealt with this or the related matter of the principle of plenitude elsewhere in his writings.

As foreshadowed above, the counterattack proper begins in the *Qawāʿid* by underlining the fact that Kātibī has no way to give truth-conditions for a proposition like "the vacuum is impossible," which is to say, for a proposition an Avicennan philosopher takes to be unproblematically true (Appendix 2, *Qawāʿid* 254.6). Equally disturbing, Kātibī's preferred reading of the proposition, with an externalist subject term, means by "every *C*" — as has been pointed out above — only some of what is *C*, not all of it (Appendix 2, *Qawāʿid* 254.16). By going on immediately to state Avicenna's account of the subject term, Ḥillī is able to highlight the fact that it is — prima facie — free from both of these shortcomings (Appendix 2, *Qawāʿid* 254.u).

I think the fact that Rāzī and Kātibī can't give truth-conditions for a proposition with an impossible subject is seen by Ḥillī as one of the fatal flaws in Kātibī's readings of the subject term, and rightly so: the logic won't be able to trace consequences from an opponent's impossible claims, because it has no account of a proposition with which to state those claims. Ḥillī's student Taḥtānī — on this question completely in line with Kātibī — is defensive about the shortcoming (Appendix 1: Text 18). The only Rāzian to have modified the essentialist reading to work for propositions with impossible subjects is Khūnajī, but his essentialist proposition leads to a series of conversions (and other inferences) which are radically different from those defended by Avicenna (Appendix 2, *Qawāʿid* 300.9).

Ḥillī's counterattack, then, highlights the fact that the Rāzians offer students of logic two readings of the subject term, both of which suffer from shortcomings which do not afflict

Avicenna's reading. He goes on to show that the Rāzians also fail to understand Avicenna's proofs, above all by failing to understand a technique which is deployed in proving, first, that "no *C* is possibly *B*" converts to "no *B* is possibly *C*", and secondly, that "every *C* is possibly *B*" and "every *B* is necessarily *A*" produce "every *C* is necessarily *A*" (among other inferences). This technique, which proceeds "on the hypothesis that the possible occurs" (*ʿalā taqdīr wuqūʿi l-mumkin*) is presented by Ḥillī twice (Appendix 2, *Qawāʿid* 302.1, 356.5 et seq.);[22] the technique is defended against the acute criticism of Khūnajī (Appendix 2, *Qawāʿid* 303.8), yet presented using terms borrowed from his *Kashf*.[23] I have to confess that I can't see how Ḥillī's argument against the Rāzians can work, but Ḥillī for one is convinced he has a technique to clear up the apparent inconsistencies which troubled Fakhr al-Dīn. In light of this technique, there is no call for the long series of Rāzian modifications to Avicenna's system.

Concluding Observations

I want to end by offering observations on a number of matters, some quite specific, others more general. The first is how negative Ḥillī's commentary really is. If it's successful, it's lethal for Kātibī's syllogistic. If Ḥillī is right, the construction of Kātibī's neat new system is motivated by an error in understanding an argument-technique central to building Avicenna's syllogistic. The alternative truth-conditions stipulated for the modal propositions produce two models, both of which are flawed with respect to the range of

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22. The elements of the technique are explored in Tony Street, "An Outline of Avicenna's Syllogistic," *Archiv für Geschichte der Philosophie* 84 (2002): 129–60, at 141–142; the technique is given an extremely charitable interpretation in Paul Thom, "Logic and Metaphysics in Avicenna's Modal Syllogistic," in *The Unity of Science in the Arabic Tradition*, edited by Shahid Rahman, Tony Street, and Hassan Tahiri (London: Springer, 2008).

23. Street, "Afḍal al-Dīn al-Khūnajī on Conversion," 475; cf. *Kashf* 136.1 et seq.

reference of the subject term. Along with these flaws are the problems Ḥillī claimed in the *Qawāʿid* dogged the account of hypothetical propositions. These problems should mean that — and I confess that I haven't seen Ḥillī make the claim — Kātibī had no way to provide an account of the contradictories of compound propositions. Kātibī's system depends on poor understanding of logical technique, inadequately drawn truth-conditions, and incoherent claims about propositional logic.

It was fifty or so years before the *Shamsīya* found the *Taḥrīr*, the text that consecrated it as the teaching text it has since remained. It was one of Ḥillī's students, Taḥtānī, who wrote the *Taḥrīr* in 1329; in the intervening years, Ḥillī had adopted at least one doctrine that made Kātibī's logic less objectionable to him and his followers (the rule to do with impossible antecedents). Taḥtānī himself was able to treat the *Shamsīya* as he did because he respected the contributors to the commentary tradition which had grown up around the *Ishārāt* with which Kātibī worked. Taḥtānī offered more criticisms, numerically, than the young Ḥillī. But he believed Kātibī was assembling the right materials, asking the right questions, and suggesting helpful answers.

And that brings me to my second observation, to do with the nature of the logical traditions doing battle over the commentary tradition encrusted on the *Ishārāt*. What Ḥillī referred to as "the author and a group of later scholars," I have referred to as the Rāzians; what Ḥillī referred to as "the Ancients" (*al-awāʾil*, *al-qudamāʾ*), I would refer to as Avicenna and the Avicennan purists. The dynamism is coming entirely from the Rāzians and the conversation, often bad-tempered, that they conduct among themselves. Unlike the Avicennan purists, the Rāzians explored suggestions that arose in the commentary tradition wherever such explorations led them. It is noteworthy how entirely internal to

the logical tradition — and especially the Rāzian logical tradition — are the dynamic factors at play. In the past, I have suggested that Ashᶜarite worries about essentialism lie behind the formulation of the externalist truth-conditions of the Rāzians. But the commentary tradition itself has all the explanatory material needed to go from *Ishārāt* 4.5 and the doctrine it contains through a complete volte-face ending in Kātibī's treatment of the subject term. (Of course, Ashᶜarite concerns could well have determined the *Shamsīya's* adoption in the madrasas, but that's an entirely different question.)

With that, I come to the last and most general of the reflections I have to offer. I suppose in the past I have tended to look on the focus-text (*matn*) of a commentary as primary, always prior to the commentaries written to explicate it. But, as exemplified by the material gathered in Appendix 1 below, it was arguments in commentary on the *Ishārāt* which pushed Kātibī to write his new focus-text, and which determined precisely the formulations he used in his own lemmata. The most important of the texts for these formulations is probably Khūnajī's *Kashf*, which I admit is only a commentary if that term is taken in a broad sense (taken to mean, for example, any text that follows the same structure and can be made to speak directly, and with the same technical terms, to important passages in an older text and its surrounding commentaries). Just as focus-texts call forth commentaries, it turns out that passages in commentaries crystallise as new focus-texts. Further, reading the *Qawāᶜid* has forced me to realise that the arguments which determined how the *Shamsīya* took shape carried on seamlessly to play a part in its ultimate reception.

Kātibī adopted truth-conditions for his modal propositions (that is, the externalist reading) first rejected by Avicenna,[24] and treated without much interest by Rāzī, later rehabilitated by Khūnajī and Athīr al-Dīn al-Abharī (d. 1265). Kātibī did so because he had inherited a conviction that a cluster of problems were generated by, and themselves generated, systematic tension in Avicenna's logic. These problems centred above all on modal conversions and the productivity of certain syllogistic mixes (see Appendix 1, Texts 12 & 13). None of these problems had any consequence outside the syllogistic system; they were rather internal problems whose solution was to be judged by criteria internal to the system. Kātibī's solution was, effectively, to walk away from these problems. And it's in light of that decision that we need to read Ḥillī's commentary. It's an attempt to push the *Shamsīya* back into the commentary tradition from which it had come, to block it from becoming a focus-text, and to reduce it to a series of short reports from the incoherent conversation of the Rāzian logicians.

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24. Who of course rejected it before it was called the externalist reading; see Appendix 1; the reading is stated in Text 2, criticised in Text 6.

Appendix 1: Readings of the Subject Term

In this appendix, I try to show how Avicenna's comments on the subject term in *Ishārāt* 4.5 are transformed into the stipulations Kātibī gives in §45 of the *Shamsīya*[25] for the essentialist (*bi-ḥasabi l-ḥaqīqa*) and externalist (*bi-ḥasabi l-khārij*) readings of the subject term of a proposition. I have translated many of these texts before in one article or another (though never Texts 2, 5, 9 or 11), especially to highlight the scale of Khūnajī's contribution to logical discussions. I hope that — presented all together — they convey a sense of the cumulative and transformative effect of the commentary literature and how it crystallised as a new focus-text. I concentrate on a cardinal lemma of the *Shamsīya* which determines much of Kātibī's treatment of the syllogistic.

PREMLIMINARIES: THE TRANSFORMATION

More specifically, I try to tell part of the story about how the tradition begins with these lemmata in the *Ishārāt*:

[Text 1]
4.5.1. Know that when we say "every *C* is *B*", we do not mean the totality (*kullīya*) of *C* is the totality of *B*. Rather, we mean that every single thing described as *C*, be it in mental supposition or extramental existence, be it described as *C* always, or sometimes, or whatever... [is *B* in some way]. (*Ishārāt* 280)

[Text 2]
4.5.10 According to the method some people follow, "every *C* is *B*" and so forth has

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another sense, that is, it means that every *C* at a given time (*fī l-ḥāl*) is described as *B* for the time of its existence. (*Ishārāt* 285)

and transform them into this lemma in the *Shamsīya*:

[Text 3]
45. Our statement "every *C* is *B*" is used occasionally according to the essence, and its meaning is that everything which, were it to exist, would be a *C* (taken from among possible items) would be, in so far as it were to exist, a *B*; that is, everything that is an implicant of *C* is an implicant of *B*. And occasionally it is used according to external existence, and its meaning is that every *C* externally, whether at the time of the judgment or before it or after it, is *B* externally. (*Shamsīya* 252.pu–253.3)

Two minor points from the later logicians. First, logicians at least as early as Khūnajī (among them Kātibī) shift the discussion arising from *Ishārāt* 4.5 to the section in their treatises which corresponds with *Ishārāt* 3.3 (where Avicenna also touches on the subject term). Secondly, Taḥtānī's comments on Kātibī's text above guide me in my translation of *ḥaqīqīya* as "essentialist" and *khārijīya* as "externalist" by :

[Text 4]
"Every *C* is *B*" is considered at times according to the essence (whereupon it's called "essentialist", as though [the subject] is an essence in a proposition used in the sciences), and at other times according to external reality (whereupon it's called "externalist", and what is meant by "external" is what is external to the senses). (*Taḥrīr* 94.6–94.8)

Two less minor points from Avicenna. First, his stipulations about the subject term may have been read by the later logicians in tandem with some remarks in the *ʿIbāra* of the *Shifaʾ*:

[Text 5]
The meaning of the affirmation which is sometimes used for things which in one respect do not exist — when it is seen that the mind judges them as being such and such — is

that, were they to be existents with an existence in the mind, they would be such and such. It is in this way that it is said, "the vacuum has dimensions."[26]

Secondly, Avicenna offers in the *Qiyās* of the *Shifaʾ* a critique of the externalist reading in Text 2, a critique which is reprised by Ṭūsī and Ḥillī:

> [Text 6]
> If we say "every *B* is *A*" and what is meant is every one of the things existing at a given time as *B*, then it is some of what is described as *B*; but our utterance "every *B*" is more general than that.[27]

Rāzī: The basic distinction and the *law wujida* phrase

The transformation begins with Rāzī. Rāzī insists in his *Sharḥ al-Ishārāt* on a sharp distinction between alethic and temporal modalities:

> [Text 7]
> But I say that what is meant by necessity is not what is meant by perpetuity, otherwise their question as to whether there can be a non-necessary perpetual just amounts to asking whether there can be a non-perpetual perpetual — and this is obviously nonsense.[28]

Rāzī goes on to argue that an Avicennan must make space for this distinction (between, on the one hand, necessity and perpetuity and, on the other, possibility and actual existence at least at a time), because of commitments elsewhere in the larger philosophical system. But

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26. Avicenna, *al-Shifaʾ*: *al-Manṭiq*: *al-ʿIbāra*, ed. M. al-Khuḍayrī (Cairo: Dār al-kātib al-ʿarabī li-l-ṭibāʿa wa-l-nashr, 1970), 80.13–81.1. I am grateful to Wilfrid Hodges for bringing this passage to my attention.

27. Avicenna, *al-Shifaʾ*: *al-Manṭiq*: *al-Qiyās*, ed. S. Zayed (Cairo: al-Hayʾa al-ʿāmma li-shuʾūn al-maṭābiʿ al-amīrīya, 1964), 29.7–10.

28. Fakhr al-Dīn al-Rāzī, *Sharḥ al-Ishārāt*, ed. by A. Najafzāda (Tehran: Institute of Islamic Studies, Tehran–McGill Universities, 2005), 187.7–9. The Arabic of the full argument is given, along with a translation, in the appendix of Street, "Faḫraddin al-Rāzī's Critique of Avicennan Logic."

once a logician insists on the distinction, the question arises: Is the subject term ampliated to the possible (such that "every *C*" is understood as "every possible *C*") or not? A number of inferences for which Avicenna offers proofs would be easier to prove if it did so ampliate. I have marked these inferences off in Texts 12 and 13 below, taken from Khūnajī's *Kashf*; this is the neatest summary of the problems I have found among the writers in the Rāzian tradition. Taken along with some comments of Rāzī in one of his short works about conversion of the one-sided actuality proposition ("every *C* is at least once *B*"),[29] they allow us to set out the Avicennan claims which — taken together — troubled the Rāzians:

(1a) a necessity e-proposition converts as a necessity proposition,
(1b) an affirmative possibility proposition converts as a possibility proposition,
(1c) a first-figure syllogism with a possibility proposition as minor premise produces,
(2a) a necessity affirmative proposition implies an absolute proposition, and
(2b) an affirmative absolute proposition converts as an absolute proposition;

troublesome given that — as I say — the Rāzians refused to elide the distinction between temporal and alethic modalities.

Led by a plausible reading of Avicenna's treatment of the subject term in *Ishārāt* 4.5 (especially in light of Text 6 above), Rāzī — in a friendly gloss (the third kind Wisnovsky describes, a complete definition of part of the conceptual vocabulary)[30] — introduced the distinction between essentialist and externalist readings. The essentialist is Rāzī's preferred reading, and what he took to be a clearer statement of what Avicenna had tried to stipulate. (For the following texts, I use the fuller formulations of the *Mulakhkhaṣ* rather than the

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29. Fakhr al-Dīn al-Rāzī, *Lubāb Al-Ishārāt* (Cairo: Maktabat al-Khānjī, 1936) 24.16–20; translated in Street, "An Outline of Avicenna's Syllogistic," 154.

30. Robert Wisnovsky, "Avicennism and Exegetical Practice in the Early Commentaries on the *Ishārāt*," *Oriens* 41 (2013): 349–78, at 355.

slightly later *Sharḥ al-Ishārāt* ad 4.5, 201.3 et seq.) For "every *C* is *B*", Rāzī has the reading mean that *C*,

> [Text 8]
> ...were it to exist externally (*law wujida fī l-khārij*) it would be true of it that it is *C*, whether it exists externally or not. For we can say "every triangle is a figure" even if there are no triangles existent externally. The meaning is rather that everything which would be a triangle were it to exist would be — in so far as it existed — a figure...[31]

Like Avicenna, Rāzī rejected Fārābī's way of ampliating to the possible, and that is why — if we are to believe Ṭūsī[32] — he used the phrase *law wujida jīm*.

> [Text 9]
> [Fārābī] has the right to intend by "every *C* " whatever he wants, but language rejects it (*lākinna l-lughata taʾbāhu*), because "black" doesn't deal with a substance always devoid of blackness, even if the substance is possibly described by it. (*Mulakhkhaṣ* 142.5–7)

Rāzī was less interested in the externalist reading which Avicenna had rejected in Text 6, such that by "every *C* " we mean every single thing which exists externally among the individual *C*s. In the externalist,

> [Text 10]
> ...we mean by "every *C* " every single thing which exists externally among the individual *C*s... On this hypothesis, were there no septagons existent externally, it wouldn't be correct to say "every septagon is a figure"; if the only figures existent externally were triangles, it would be correct to say "every figure is a triangle." On the first reading, [that is, the essentialist reading,] both of these would be false. (*Mulakhkhaṣ* 142.13–143.1)

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31. Fakhr al-Dīn al-Rāzī, *Manṭiq al-Mulakhkhaṣ*, ed. by A. Ḳarāmalekī & A. Aṣgharīnezhad. (Tehran: I.S.U. Press, 2002), 141.7–10. (Henceforth *Mulakhkhaṣ*.)

32. Naṣīr al-Dīn al-Ṭūsī, *Taʿdīl al-miʿyār fī naqd Tanzīl al-afkār*, in *Collected Texts and Papers on Logic and Language*, ed. by M. Mohaghegh and T. Izutsu (Tehran 1971), 162. (Henceforth *Taʿdīl*.)

Armed with his essentialist reading, Rāzī took himself to need only to modify Avicenna's claim that the affirmative absolute converts to an absolute proposition ([2b] above, and in Text 12 below; Rāzī has it convert as a possibility proposition); all the other claims in Texts 12 and 13 now go through. The repair is minor, the mood, irenic.

A summary to this point: Kātibī gets the distinction itself, and the basic formulation of the essentialist reading with the subjunctive phrase, *law wujida*, from Rāzī.[33]

KHŪNAJĪ: THE EXPLORATION OF THE IMPOSSIBLE

Fifty years later, Rāzī's student Khūnajī considered *Ishārāt* 4.5 along with Rāzī's comments in the *Mulakhkhaṣ* and the *Sharḥ*; as mentioned, he shifted the discussion from the place corresponding to *Ishārāt* 4.5 to what corresponds with *Ishārāt* 3.3. When it came to the distinction between alethic and temporal modalities, Khūnajī went further than Rāzī: there was no need to force Avicenna to accept the distinction, because it is clear from his work that he did (although he often failed to express it clearly).

[Text 11]
What Avicenna has to say in most passages indicates that the necessary (*al-ḍarūrī*) is the perpetual (*al-dāʾim*). It is clear that what he means is the necessary perpetual (*al-dāʾim al-wājib*), namely, that which inevitably belongs to the thing, and which is inseparable from it, due to what he says explicitly in *Syllogism* 1.4 when he interprets the possible as: "The possible is that whose existence and non-existence is not necessary; it may not exist at all, yet it may accompany [the thing] perpetually." What he has to say in the *Ishārāt* agrees with this, and Bahmanyār says the same in the *Taḥṣīl*. So you should know that the perpetual is weaker than the necessary, because whatever is inseparable from the thing is perpetual for it, but not the other way round (because [what is possible for a

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33. Normally *law* is a particle marking a counterfactual conditional (see e.g. William Wright and Carl Paul Caspari, *A Grammar of the Arabic Language* (Cambridge: Cambridge University Press, 1932) 2: 347); in this usage, however, the antecedent can also be true.

thing] may accompany it perpetually but non-necessarily, like the negation of writing from many men). (*Kashf* 93.pu–94.6)

For him, Rāzī's project to disambiguate Avicenna's account of the subject term is misdirected charity; Avicenna had failed to work out how he intended to use the subject term.

[Text 12]
Perhaps Avicenna hesitated over [2b] the conversion of actuality propositions as either possibility or absolute propositions just because of his hesitation over technical usage. When he says that they convert as possibility propositions he doesn't consider affirmation in actuality with respect to the subject; when he says that they convert as absolute propositions, he does (because the fact the absolute follows on this technical usage is just about patently evident, such that it wouldn't be appropriate for Avicenna to deny it). (*Kashf* 145.11–u)

This is a cardinal moment in the ultimate rejection of Avicenna's modal syllogistic. Khūnajī is fixing the blame on imprecision in the original technical usage; no interpretation can repair it. This is especially the case with Rāzī's essentialist reading; it may square the problematic inferences, but it just amounts to the Fārābian ampliation he rejected in Text 9.

[Text 13]
Were we to be satisfied that for something to be a subject the possibility [of its coming under the subject term would be enough], and not consider [the subject term's] affirmation of it in actuality (as Fārābī held), it would follow that [1a] the [universal] negative necessity proposition would convert as a necessity proposition, [1b] the affirmative possibility proposition would convert as a possibility proposition, [2b] the conversion of actuality propositions wouldn't result in more than possibility, and [1c] the syllogism in the first figure with a minor possibility proposition would be productive, as will be clear to you after coming to know what has gone before, and having given due consideration to the propositions under this technical usage. (*Kashf* 145.4–9)

Khūnajī's attack on aspects of the commentary tradition on the original lemmata is coordinated with two alternative proposals. One is to rehabilitate the rejected externalist reading, if only because of the clarity of treatment it allows; Khūnajī explored the reading thoroughly and accurately. Almost of all the syllogistic proofs we find in the *Shamsīya* are in a form they were given by Khūnajī.

The second is to relegislate Rāzī's essentialist reading to deal with impossible items as well. Khūnajī was tempted to this by the subjunctive phrase, *law wujida jīm*, intended by Rāzī to rule out Fārābī's unrestricted ampliation, and perhaps also by Avicenna's remark in Text 5. As a result of this relegislation, Khūnajī ended up with radically different inferences in his syllogistic,[34] some of which are mentioned by Ḥillī (*Qawāʿid* 300.9 et seq.).

> [Text 14]
> ...[the proposition with an essentialist subject] deals with actual, possible and impossible items [that come under the subject term]. Were we to stipulate the possibility [of these items] along with [the other stipulations], their status would be that of externally existent things. So the eclipsed-which-is-not-a-moon, even though it is impossible, is among those items which would be eclipsed, were they to come to exist, even though it is not necessary that any would be a moon if they came to exist. (*Kashf* 130.7–11)

In summary: Khūnajī gives nothing directly to Kātibī's formulation of the essentialist reading, but he triggers the discussions which end in the gloss in §45 "every implicate of *C* is an implicate of *B*" and the rider ("taken from among possible items"), both given in Text 14 to rule out Khūnajī-style impossibilities. His exploration of the externalist reading, on the other hand, is almost exactly the system Kātibī presents.

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34. For his different account of conversion, see Street, "Afḍal al-Dīn al-Khūnajī on Conversion."

Abharī is the first to show how many problems there are in Khūnajī's modified account of the essentialist reading.

> [Text 15]
> On the second usage, if it is said "every *C* is *B*," what is meant is that everything that would be a *C* were it to exist, would be a *B* in so far as it were to exist; that is, everything that has the first state posited would have the second. This means that everything that is the implicant of *C* is the implicant of *B* (*anna kulla mā huwa malzūmu jīm fa-huwa malzūmu bāʾ*). This extends to the impossible such that it is true that everything that is man and non-animal is a man; because, even if it's impossible of existence, it's none the less true that were it to exist it would be a non-animal man, so, were it to exist, it would be a man.
>
> The e-proposition on this account would never be true, because when you say no man is a stone its contradictory is true. This is because "everything that is a-man-and-a-stone is a man," and "everything that is a-man-and-a-stone is a stone," so "some man is a stone." From this it is clear that the i-proposition is always true.
>
> Since this is the case, we may restrict the subject to what is not impossible. So if we say "every *C* is *B*" in the essentialist reading, we mean every implicant of *C* among items not impossible in themselves or through another is the implicant of *B* (*anna kulla mā huwa malzūmu jīm min al-afrādi llatī lā yamtaniʿu bi-dhātihā wa-lā bi-ghayrihā fa-huwa malzūmu bāʾ*).[35]

Abharī contributes to the lemma the gloss for the subjunctive reading of the essentialist (*law wujida jīm…*) as "every implicant of *C* is an implicant of *B*" (*anna kulla mā huwa malzūmu jīm fa-huwa malzūmu bāʾ*), the insight that the Khūnajī essentialist reading makes the e-proposition always false, and the i-proposition always true, and the first formulation of a

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35. Athīr al-Dīn al-Abharī, *Tanzīl al-afkār*, given as lemmata in Naṣīr al-Dīn al-Ṭūsī, *Taʿdīl al-miʿyār fī naqd Tanzīl al-afkār*, in *Collected Texts and Papers on Logic and Language*, edited by M. Mohaghegh and T. Izutsu (Tehran 1971), 160.16–161.7. This passage, and Texts 16 and 17, were first translated in Tony Street, "Appendix: Readings of the Subject Term," *Arabic Sciences and Philosophy* 20, (2010): 119–24.

rider to rule those unwelcome results out ("every implicant of *C* among items not impossible in themselves or through another").

Ṭūsī: The second formulation of the rider

Ṭūsī didn't want the essentialist/externalist distinction (like Ḥillī, he thought the original Avicennan formulation of the subject term was — taken along with the proofs in Appendix 2, *Qawāʿid* 302.1 et seq., 356.5 et seq. — durable enough to resist all the problems the Rāzians raised), but he was still prepared to tinker with the formulations. So he pointed out that the Khūnajī reading not only makes the i-proposition always true, as Abharī had noted; it also makes the o-proposition always true, even with the rider:

> [Text 16]
> Then Abharī fled from these repugnant consequences [of the Khūnajī view], going some way back towards the truth by restricting the subject to what is not impossible in itself or through another. But this still won't allow him to hold the doctrine mentioned. This is because if we say "every *C* is *B*" by two-sided (*khāṣṣa*) possibility or "no *C* is *B*" by two-sided possibility (and *B* is something whose joining and not joining to *C* is not impossible either in itself or through another...), then it will be true that (1) "all that is *C*-and-*B* is *C* necessarily" and (2) "all that is *C*-and-*B* is *B* necessarily," and (1) and (2) produce "some of what is *C* is *B* necessarily." Similarly it is true that (3) "all that is *C*-and-not-*B* is *C* necessarily" and (4) "all that is *C*-and-not-*B* is not-*B* necessarily," and (3) and (4) produce "some of what is *C* is not-*B* necessarily." (*Taʿdīl* 163.20–164.4)

At the very least, the rider will have to be modified:

> [Text 17]
> It is necessary to restrict the subject to what is not impossible in itself. But restricting it to what is not impossible through another raises questions. This is because what is possible in itself to be *C* and rendered impossible by another to be *C* actually and externally (*bi-l-fiʿl fī l-khārij*), but is supposed none the less to be *C* actually, must fall

under every *C*; yet it doesn't fall [under *C*] on this account in consequence of the restriction. (*Taʿdīl* 164.8–11)

At the end of these reflections, Kātibī was able to propose a formulation which may avoid the problems Ṭūsī finds for the Abharī formulation.

POSTSCRIPT

If Avicenna's reflections in Text 6 really did provide the inspiration for Rāzī's essentialist reading, it is ironic that the reading which finally developed out of the line of commentary on *Ishārāt* 4.5 is not fit for propositions with an impossible subject. Taḥtānī is apologetic about a situation which I think troubled Ḥillī.

> [Text 18]
> It is not to be levelled as a criticism that, because the craft should have general rules, there are propositions that cannot be taken under either of these two considerations (namely, those whose subjects are impossible, as in "the co-creator is impossible," and "every impossible is non-existent"). Because we say: No one claims to limit all propositions to the essentialist and the externalist. They do however claim that propositions used in the sciences are used for the most part under one of these two considerations, so they therefore set these readings down and extract their qualifications so they may thereby benefit in the sciences. The qualifications of the propositions that cannot be taken under either of these two considerations are not yet known; the generalization of rules is only to the extent of human capacity. (*Taḥrīr* 95.pu–96.11)

Appendix 2: Translations from Ḥillī

45. [Kātibī, 252.pu–253.3] Our statement "every *C* is *B*" is used occasionally according to the essence, and its meaning is that everything which, were it to exist, would be a *C* (taken from among possible items) would be, in so far as it were to exist, a *B*; that is, everything that is an implicant of *C* is an implicant of *B*. And occasionally it is used according to external existence, and its meaning is that every *C* externally, whether at the time of the judgment or before it or after it, is *B* externally.

[Ḥillī...]

[253.15] If you are acquainted with this then know also that "every *C* is *B*" under this consideration is used occasionally according to the essence (and its meaning is that everything which, were it to exist, would be a *C* (taken from among possible items) would be, in so far as it were to exist, a *B*), by which we mean that every implicant of *C* is an implicant of *B*. This proposition is called the absolute essentialist. And ["every *C* is *B*"] is used on other occasions according to external [existence], the meaning of which is that every *C* externally is *B* externally; it is not stipulated that the judgment be at the time of the existence of *C* or before it or after it. This proposition is called [254] the absolute externalist. The proposition may have an essentialist subject and an externalist predicate, as "everything which, were it to exist it would be *C*, is *B* externally"; or the reverse, as "every *C* externally is, in so far as it exists, *B*."

[254.6] Kātibī restricted the items in the essentialist reading to the possible to exclude impossible items. In consequence, it would not be correct to say "the vacuum is impossible (*mumtaniᶜ*)" according to the essence, due to the impossibility (*istiḥāla*) of "everything

which were it to exist would be a vacuum is, in so far as it exists, impossible." The later scholars called such a proposition the mental proposition (*al-qaḍīya al-dhihnīya*).

[254.10] Know that there is matter for reflection with respect to the author's gloss of the essentialist proposition [as *kullu malzūm* etc.]. This is because *C* is not necessarily true of the implicant of *C*, given what is meant by *C* (that is, that of which *C* is true). For were the perfect causes of *C* to exist, *C* would exist; but "*C*" is not necessarily true of them.

[254.13] This is the case if the subject is "everything which, were it to exist it would be *C*" without the appositive "and"; if the appositive conjunction is used, then no distinction remains between the absolute [proposition] and the perpetuity [proposition] (for at this point the meaning of the absolute proposition would be "everything which were it to exist and be *C* would be an implicant of *B*").[36]

[254.16] The externalist proposition is the doctrine of a certain ancient scholar, and Avicenna in the *Shifāʾ* rejected it as ridiculous (*nasabahu ilā l-sakhāfa*).[37] Avicenna explained its falsity (*buṭlānahu*) by arguing that if we mean by "every *C*" what is *C* among the items that occur at a given time, it is only some of *C*, not all of it.

[254.u] Know that the meaning common among most people for "every *C* is *B*" is that [255] every single thing of which *C* is said — whether verified or supposed (*immā taḥqīqan wa-*

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36. This is an argument about the formulation of the *ḥaqīqī* reading, whether as *kullu mā law wujida wa-kāna jīm* (with the appositive), or *kullu mā law wujida kāna jīm* (without). If I understand correctly (and I speculate on something which merits proper analysis), the first formulation has the effect of making the subject perpetual, and therefore also — because it is entailed by whatever entails the subject — the predicate; the second does not have this effect (and therefore the predicate is not perpetual).

37. Avicenna, *al-Shifāʾ*: *al-Manṭiq*: *al-Qiyās*, 29.7–10.

immā farḍan), whether the *C*-ness is its substance (*dhātahu*) or its attribute (*ṣifatahu*), whether perpetually or not, whether existent externally or in the intellect or in mental supposition (*fī l-farḍ al-dhihnī*), and given that it is not impossible of existence in itself (*li-dhātihi*) — is a *B*. On this understanding, the impossibilities don't enter under the subject, nor does what is only potentially *C* (unless it is assumed to be *C*). If the subject is impossible of existence in itself, as for example the void and the atom (*al-jawhar*), it may be understood according to the opinion of someone who holds that it is not impossible; on being described as actually existing externally, as a vacuum and an atom, judgment is made of [the subject] in so far as what would be judged of it if it were like that.

[255.8] This is a verification of this subject, and we have gone on at length here due to the error of the author and a group of later scholars with respect to it.

Relative strength of externalist and essentialist propositions

> 46. [Kātibī, 255.10] The distinction between the two considerations is obvious. Were there no squares in external existence it would be true to say "every square is a figure" under the first consideration but not the second; and were there no figures in external existence other than squares, it would be correct to say "every figure is a square" under the second consideration but not the first.

> 47. On this basis, assess the remaining quantified propositions.

[Ḥillī, 255.14] On Kātibī's technical usage, what distinguishes the absolute essentialist from the absolute externalist is that each one may be true while the other is not.

[255.apu] The essentialist may be true while the externalist is not because, were we to suppose there were never any squares in external existence, "every square is a figure" would be true [as an essentialist]. This is because were a square to exist it would be a figure,

yet you know that no existence is stipulated for this; the externalist on the other hand would be false [256] due to the stipulation that its subject exist externally. On the other hand, the externalist may be true while the essentialist is not because, were we to suppose that the figures in external existence were limited to squares, "every figure is a square"[38] would be true as an externalist proposition, because every figure [existing] externally would be a square [existing] externally. But the essentialist proposition would be false, because the triangle, were it to exist, would be, in so far as it were to exist, a figure, yet it would not be, in so far as it were to exist, a square.

[256.6] Neither of the two a-propositions is implicationally weaker (*aᶜamm*) than the other without qualification, but rather they overlap in truth-conditions (*baynahumā ᶜumūm min wajh*). This is so due to their distinction in truth given above, and their [common] truth in every matter whose externally existent items are all that can exist of those items.

[256.9] The essentialist i-proposition is weaker than its a-proposition, and than the externalist a- and i-propositions. The essentialist e-proposition is stronger than[39] the externalist e-proposition (because whenever the e-essentialist is true, so is the externalist e-proposition, the items (*afrād*) under its subject being some of the items of the essentialist). The converse is not the case, due to the truth of the externalist e-proposition in the example we have given (limiting figures to squares); for "no figure is a triangle" may be true as an externalist, but not as an essentialist e-proposition, because some of that which, were it to exist, would be a figure, would be, in so far as it were to exist, a triangle.

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38. Reading *kullu shakl murabbaᶜ* for *kullu murabbaᶜ shakl* at 256.3.

39. Reading *akhaṣṣu min* for *akhaṣṣu* at 256.10.

[256.15] And the o-propositions are co-implicative.

CONVERSION

74. [Kātibī, 299.10–16] Consider the negatives: If the negative is universal, there are seven modalities which cannot be converted, namely, the two temporals, the two hyparctics, the two possibility propositions and the general absolute. This is because of the impossibility of converting the strongest of them, the temporal, due to the truth of "no moon is possibly eclipsed at the time of standing square to the earth-sun line, not perpetually", and the falsity of "some of what is eclipsed is not necessarily a moon" as a general possibility proposition (which is the weakest of the modalities), because everything which is eclipsed is a moon necessarily. If the strongest does not convert, nor does the weaker; for were the weaker to convert, so would the stronger (because the implicate of the weaker is necessarily the implicate of the stronger).

[Ḥillī, 299.17] The custom of the Ancients (al-awāʾil) was first to mention the status of the negative propositions in conversion, and so — in imitation of his forebears — the author begins with these propositions. Know that negative propositions are either universal [an e-proposition], or particular [an o-proposition]. Seven of the e-propositions don't convert, the ones the author mentions. This is because the temporal is the strongest of these seven [300], and — as we said earlier — it doesn't convert; and if the strongest doesn't convert, nor does the weaker.

[300.3] The proof that [the temporal] does not convert is that "no moon is possibly eclipsed at the time it is at right angles to the two luminaries, not always" may be true, and its converse (namely, "some eclipsed is not necessarily a moon" — the one-sided possibility being the weakest of the modalities) false, because every eclipsed is necessarily a moon. The proof that the remaining e-propositions fail to convert is because they are weaker than the

temporal; were they to convert, so would the temporal, because the implicate of the weaker is the implicate of the stronger.

[300.9] Khūnajī held that these seven e-propositions convert to perpetuity o-propositions, because were "no *C* is always *B*" true, two premises would also be true. First, everything which is *B* perpetually is *B* just *tout court* — this is necessarily true. Secondly, "no always-*B* is ever *C*" is true (otherwise its contradictory "some always-*B* is once *C*" is true; but if it is a minor with the original proposition as major, they produce by [Ferio] "some always-*B* is not always *B*", which is absurd). And if these two premises are true, they produce by [Felapton] "some *B* is never *C*", which is what is sought.[40]

[300.apu] This proof only goes through if it is granted that the subject of the essentialist proposition be taken in such a way that the impossible enters into it; otherwise a rebuttal (*man*ᶜ) is available against the first premise. But if the subject is taken on this [i.e. Khūnajī's] interpretation (*tafsīr*), the counter-example (*naqḍ*) which has been mentioned will not work, because "some [301] eclipsed is not a moon" may be true given the eclipsed-which-is-not-a-moon; even if it is impossible, it is such that were it to exist it would not be a moon.

[301.3] This is true if it is granted that the subject be taken on the interpretation which Khūnajī has put forward; but it differs from normal technical usage (*lākinnahu mukhālifun li-mā ᶜalayhi l-iṣṭilāḥ*).

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40. See Street, "Afḍal al-Dīn al-Khūnajī on Conversion," 469–470 for a translation of Khūnajī on this conversion, and 485–486 for comments on the text.

75. [Kātibī, 301.5–8] The [universal] negative absolute necessity and absolute perpetuity propositions convert as a universal perpetuity, because if "no *C* is *B*" were true of necessity, or always, then always, "no *B* is *C*"; were it not the case, then "Some *B* is *C*" as a general absolute proposition, and this, together with the original proposition, would produce "Some *B* is not possibly *B*" for the necessity proposition, and "Some *B* is never *B*" for the perpetuity proposition; and this is absurd.

[Ḥillī comes back to deal with §75 after §76.]

[Ḥillī, 302.1] Know that the writer differs from the earlier scholars (*al-mutaqaddimīn*) with respect to the conversions of the necessity and conditioned propositions; they held that both convert as themselves.[41] With respect to the necessity proposition, this is because if "no *C* is possibly *B*" is true, then "no *B* is possibly *C*" is true, otherwise "some *B* is possibly *C*" [would be true], which is impossible for a number of reasons. The first of these is that, were it (i.e. "some *B* is possibly *C*") true in actuality (*law ṣadaqa bi-l-fiʿl*), it would form with the original proposition ["no *C* is possibly *B*"] a syllogism producing "some *B* is not possibly *B*", which is impossible, so its truth in actuality is impossible.

[303.8] A certain later scholar[42] said: "We don't concede that the original remains true on the hypothesis that the possible occurs (*ʿalā taqdīri wuqūʿi l-mumkin*), such that the impossibility follows." To which we answer: One of two things follows, namely, either the original proposition is false on the hypothesis that the possible actually occurs, or it entails

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41. The phrase "convert as themselves" (*tanʿakis ka-nafsihā*) means that the converse has not just the same quality, but also the same modality as the convertend. "The earlier scholars" are Avicenna and the Avicennan purists.

42. Khunajī; see *Kashf* 136.10 et seq.; translated in Street, "Afḍal al-Dīn al-Khūnajī on Conversion," 475 (argument no. 3).

the impossible. Yet both of these alternatives is impossible, so the occurrence of the possible is impossible — therefore it is not possible, which is what is sought. Secondly, "some *B* is actually *C*" entails "some *C* is actually *B*"; yet the implicate is impossible, thus so too is the implicant — therefore it is not possible. Third, we suppose that "some" [of "some *B* is possibly *C*"] as *D*, such that the possibility of *C* and the possibility of *B* conjoin in *D*, therefore it is possible that some *C* is *B*, which contradicts the original proposition.

[303.apu] The meaning of the general conditioned proposition is that it is impossible to conjoin the descriptions *C* and *B* in a single substance — this entails the truth of the converse mentioned. [This can be also proved] by the proof given for the necessity proposition.

Possibility a- and i-conversion

80. [Kātibī, 312.10–apu] The status of the two possibility propositions with respect to conversion or its failure is unknown due to the fact that the demonstration mentioned to prove their conversion depends on the conversion of the negative necessity proposition as itself, and on the productivity of a possibility minor with a necessity major in the first figure, and neither of these can be verified. This in turn is due to lack of success in finding a proof which compels acceptance or rejection of the conversion of the possibility proposition.

[Ḥillī, 312.pu] Our predecessors held that the two possibility propositions convert as a general possibility proposition, and they sought to prove this conversion with two arguments. [313]

[313.1] First, were the converse false, its contradictory (the necessity e-proposition) would be true, which converts as itself, whereupon it follows that two contradictories are true, which is impossible. For example, if "every (or some) *C* is *B*" by one of the two possibilities,

then "some *B* is possibly *C*" is true as a general possibility, otherwise "no *B* is possibly *C*", which converts to "no *C* is possibly *B*", which contradicts the original i-proposition and is incompatible (*yuḍādd*) with the a-proposition.

[313.7] Second, were the contradictory of the converse true (that is, "no *B* is possibly *C*"), we make it the major and the original proposition ("every (or some) *C* is possibly *B*" in either of the two possibilities) the minor, which produces in the first figure "some *C* is not possibly *C*" or "no *C* is possibly *C*"; this is impossible.

[313.11] Since the author has shown (*bayyana*) that the necessity proposition does not convert as itself, he has — in his opinion — refuted the first argument. And since — in his opinion — the possibility minor cannot be used in the first figure (as will be explained presently), he has refuted the second argument. And since no other proof for the conversion of the possibility proposition has become apparent to him (*lam yaẓhar lahu*), then undoubtedly he should suspend judgment as to its convertibility or otherwise.

ON SYLLOGISMS

> 98. [Kātibī, 355.16] The condition for the first figure with regards to its modality is that the minor premise be actual.

[Ḥillī, 356.5] The Ancients (*al-qudamāʾ*) claimed to produce a necessity conclusion from a possibility minor with a necessity major. On the hypothesis that the possible occurs (*ʿalā taqdīri wuqūʿi l-mumkin*) the conclusion would be necessary, and thus it is necessary in the way things are in themselves (*fī nafsi l-amr*); otherwise the possible entails the impossible (namely, what is not necessary being necessary on the assumption of the possible).

[356.9] [And the Ancients also claimed] that from a possibility minor and a possibility major a one-sided possibility conclusion [is produced]. [This is because] on the hypothesis that the possible occurs, the possibility [conclusion] is true; so it is that the possibility [conclusion] is true according to the way things are in themselves. Otherwise what is not possible according to the way things are in themselves is possible on the hypothesis that the possible occurs, and this is absurd.

[356.12] Similarly if the major is an existential and the minor a possibility. If it is a two-sided possibility, then, with one of its two parts, the minor forms a syllogism which produces a one-sided possibility, and with its other part, a syllogism producing a one-sided possibility conclusion differing [in quality] from the first — so the conclusion will be two-sided.

[356.15] The later scholars rejected the truth of the major on the the hypothesis that the [possible] minor occurs.[43] This is an error [which they should reject], otherwise they are mired in what they seek to flee. For were the necessity or possibility majors false on the hypothesis that the possible [predicate in the possibility minor] occurs, then the possible would entail the impossible, because the falsity of the necessary or the possible is impossible in itself. (It is however possible for the existential to be false, because the judgment may follow the description rather than the essence of the middle, and it is unknown whether [the description] applies to the minor term; so here rebutting the truth as to its actual application is possible for these propositions.) But the possible [must follow], for the possible is implied (*lāzima*) in any case. [357]

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43. E.g. Khūnajī; see *Kashf* 272.4 et seq., at 271.10 et seq.

[357.1] According to the doctrine of the Ancients (*al-qudamā*ʾ), the productive connexions in this figure are 169 moods, coming about from 13 squared. According to the doctrine of the author, 26 of these are dropped, the result of 13 times 2 possibility propositions.

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